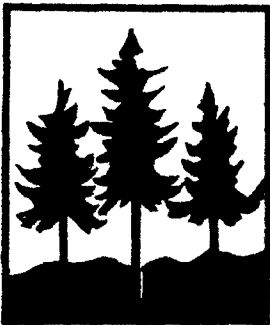




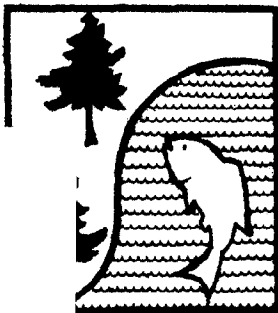
RURAL LANDS STUDY



DRAFT ENVIRONMENTAL IMPACT STATEMENT



GRAYS HARBOR COUNTY



THE GRAYS HARBOR
REGIONAL PLANNING COMMISSION

HD
256
.D72
1982

DRAFT ENVIRONMENTAL IMPACT STATEMENT

ON THE

EASTERN GRAYS HARBOR COUNTY

RURAL LANDS RECOMMENDATIONS

U.S. DEPARTMENT OF COMMERCE NOAA

COASTAL SERVICES CENTER

2234 SOUTH HOBSON AVENUE

CHARLESTON, SC 29405-2413

SEPTEMBER 1982

"The preparation of this document was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308 (c) (1) of the Coastal Zone Management Act of 1972."

GRAYS HARBOR COUNTY
THE GRAYS HARBOR REGIONAL PLANNING COMMISSION

HD256.D72 1982

DRAFT ENVIRONMENTAL IMPACT STATEMENT

ON THE

RURAL LANDS RECOMMENDATIONS

1. INTRODUCTION

Purpose:

Grays Harbor County is considering adoption of the Rural Lands Study Recommendations. This Draft Environmental Impact Statement (DEIS) is intended to assess the impacts of the proposals and communicate these impacts to the decision-makers of Grays Harbor County. As the State Environmental Policy Act Guidelines note ". . .the purpose of a Draft Environmental Impact Statement is to aid decision-makers in considering the significant environmental impacts of their decisions."¹ This Draft Environmental Impact Statement will consider the anticipated environmental and social impacts of the proposals as required by the Washington State Environmental Policy Act (RCW 43.21C).

Description of
Proposed Action:

The Rural Lands Recommendations include the following components:

- (1) A Rural Lands Element of the Grays Harbor County Comprehensive Plan.
- (2) Two new zoning districts and a modified district to be applied to certain areas of unincorporated Eastern Grays Harbor County.
- (3) A Community Plan Coordination Element which proposes policies to coordinate the county comprehensive plans with the comprehensive plans of other jurisdictions and adopts the comprehensive plans of four cities by reference.
- (4) A set of definitions which clarify the proposed Rural Lands and Community Plan Coordination Elements of the county comprehensive plan.

These proposals will be applied to unincorporated Eastern Grays Harbor County, which is shown on Map 1. The full text of these proposals is contained in the Rural Lands Study Part 2: Recommendations available from the Grays Harbor County Planning Department.

Action Sponsor and
Lead Agency:

Grays Harbor County Planning Department
Old County Courthouse
P.O. Box 390
Montesano, WA 98563

The map displays the state of Washington with its county boundaries. The counties shown are Clallam, Jefferson, Mason, Pierce, Thurston, Lewis, and Pacific. The Grays Harbor area is highlighted in the center. Major cities like Seattle, Tacoma, Olympia, and Everett are marked. The map is titled "VICINITY MAP EASTERN GRAYS HARBOR COUNTY WASHINGTON" in the top right corner. A scale bar indicates distances from 0 to 40 miles. A north arrow points towards the top of the map. The map shows the coastline of Washington and the surrounding counties: Clallam, Jefferson, Mason, Pierce, Thurston, Lewis, and Pacific. The Grays Harbor area is highlighted in the center.

Clallam
Jefferson
Mason
Pierce
Thurston
Lewis
Pacific

Grays Harbor
Everett
Seattle
Tacoma
Olympia
Shelton
Centralia
Raymond
Westport
Ocean Shore
Aberdeen
Hoquiam
Elmer
Oarville

101
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

VICINITY MAP
EASTERN
GRAYS HARBOR COUNTY
WASHINGTON

0 10 20 30 40

NORTH

"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."

"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."

Responsible Official
and Contact Person:

Thomas Mark, Planning Director
Grays Harbor County Planning Department
P.O. Box 390
Montesano, WA 98563
Phone: (206) 249-5579

Author and Principal
Contributors:

The Grays Harbor Regional Planning Commission
Pat Dugan, Executive Director (Former)
Janet Richardson, Acting Executive Director
Tim Trohimovich, Senior Planner
Gordon White, Planner
Steve Landcaster, Planner
Tu Nguyen, Graphics/Drafter
Sherry McCollum, Office Manager
Chris Foshaug, Clerk-Typist

Licenses Required:

Legislative approval by the Planning Commission
and the Board of County Commissioners, Grays
Harbor County, Washington.

Location of EIS
Background Data:

The Offices of the Grays Harbor Regional Planning
Commission
2109 Sumner Avenue
Suite 202
Aberdeen, WA 98520
Phone: (206) 532-8812

EIS Cost:

One copy: no charge. Additional copies: \$4.00
per copy.

Date of Issue of
Draft EIS:

October 1, 1982

Date by Which Comments
Must be Received to be
Incorporated into the
Final EIS:

November 5, 1982

2. TABLE OF CONTENTS

| <u>TITLE</u> | <u>PAGE NUMBER</u> |
|---|--------------------|
| 1. INTRODUCTION | 1 |
| 2. TABLE OF CONTENTS | 4 |
| 3. DISTRIBUTION LIST | 6 |
| 4. SUMMARY OF THE ENVIRONMENTAL IMPACT STATEMENT | 7 |
| 5. DESCRIPTION OF THE PROPOSAL | 12 |
| 6. EXISTING ENVIRONMENTAL CONDITIONS AND ANTICIPATING IMPACT OF THE PROPOSAL ON THE ENVIRONMENT TOGETHER WITH POTENTIAL MITIGATION MEASURES | 17 |
| INTRODUCTION | |
| A. ELEMENTS OF THE PHYSICAL ENVIRONMENT | 17 |
| 1.0 Earth | 17 |
| 2.0 Air Resources | 25 |
| 3.0 Water Resources | 28 |
| 4.0 Flora Resources | 34 |
| 5.0 Fauna Resources | 35 |
| 6.0 Noise Conditions | 36 |
| 7.0 Light and Glare | 37 |
| 8.0 Land Use | 38 |
| 9.0 Use of Natural Resources | 42 |
| 10.0 Risk of Explosion or Hazardous Emissions | 43 |
| B. ELEMENTS OF THE HUMAN ENVIRONMENT | 43 |
| 1.0 Population | 43 |
| 2.0 Housing | 44 |
| 3.0 Transportation and Circulation | 50 |
| 4.0 Public Services | 61 |
| 5.0 Energy Use | 75 |
| 6.0 Utilities | 77 |
| 7.0 Human Health | 79 |
| 8.0 Aesthetics | 82 |
| 9.0 Recreation | 83 |
| 10.0 Archeological/Historical | 83 |
| 11.0 Age, Sex, and Ethnic Characteristics of the Residents Affected by the Proposal | 83 |
| 12.0 County Economy | 86 |

2. TABLE OF CONTENTS (continued)

| <u>TITLE</u> | <u>PAGE NUMBER</u> |
|--|--------------------|
| 7. THE RELATIONSHIP BETWEEN SHORT TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY | 89 |
| 8. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES | 90 |
| 9. ALTERNATIVES TO THE PROPOSAL | 91 |
| 10. UNAVOIDABLE ADVERSE IMPACTS AND ENVIRONMENTAL BENEFITS OF THE PROPOSAL | 100 |
| NOTES ON THE DRAFT EIS | 102 |
| LIST OF THE ELEMENTS OF THE ENVIRONMENT | 103 |
| APPENDIXES | 106 |
| APPENDIX A: Rural Lands Recommendations, Acreage In Each Zoning District. | 107 |
| APPENDIX B: Existing Zoning, Acreage In Each Zoning District. | 108 |

3. DISTRIBUTION LIST

| | |
|--|-----------------|
| Department of Ecology | Frank B. Ensell |
| Grays Harbor Regional Planning Commission | Ellis Culp |
| Grays Harbor Public Utility District #1 | Nick Adams |
| Department of Commerce and Economic Development | Patrick Katzer |
| Department of Game | Robert Jackson |
| Department of Fisheries | Dan Piper |
| Department of Ecology | Buell Smith |
| Department of Natural Resources | Wendy Stern |
| Planning and Community Affairs Agency | Dorothy Ochsner |
| Department of Transportation | Betty Salsman |
| Oakville School District | Eino Gronberg |
| McCleary School District | Hank Brueher |
| Elma School District | Caroline Moony |
| Satsop School District | Dallas Muir |
| Montesano School District | |
| City of Oakville | |
| Town of McCleary | |
| City of Elma | |
| City of Montesano | |
| City of Cosmopolis | |
| Grays Harbor Community Action Council | |
| Board of County Commissioners Grays Harbor County | |
| Grays Harbor County Public Works Department | |
| Grays Harbor County Planning Commission Members | |
| U.S. Department of Agriculture Soil Conservation Service, Montesano Office | |
| WSU Cooperative Extensive Office, Montesano Office | |

4. SUMMARY OF THE ENVIRONMENTAL IMPACT STATEMENT

A. THE PROPOSAL

A legislative proposal to adopt two new comprehensive plan elements as part of the Grays Harbor County Comprehensive Plan and two new zoning districts to be applied to certain areas of unincorporated eastern Grays Harbor County. Modifications are proposed to the existing General Development Zoning District.

The Rural Lands Element will guide the development of unincorporated Grays Harbor County. The element contains policies to designate different areas for a range of uses based upon the areas development potential and constraints.

The Community Plan Coordination Element adopts the comprehensive plans of Elma, Montesano, Oakville, McCleary, and Cosmopolis as parts of the county comprehensive plan. The coordination element contains a procedure for reviewing development proposals in unincorporated areas to ensure coordination with affected cities and towns.

B. ANTICIPATED ENVIRONMENTAL IMPACTS AND POTENTIAL MITIGATING MEASURES

Earth

The proposal will reduce the potential of development occurring on geological structures and soils not suitable for intensive uses. 2,200 acres of land classified as prime agricultural land by the Soil Conservation System and approximately 300 acres of actively farmed land would be subject to conversion to other uses over time. Inadequately constructed private roads and poor development practices will continue to cause erosion and the siltation of streams and rivers negatively impacting salmon spawning beds.

Potential mitigating measures include county review of exempt five acre division of land and county road standards for private road construction and design.

Air

Existing air quality is generally good. Localized air quality could be lessened by increased development.

Water

Stormwater runoff is projected to increase by between 10 and 16 million gallons a year by 1990. The demand for groundwater will increase. This demand can be satisfied by groundwater resources without diminishing water availability.

Potential mitigating measures include incorporating stormwater controls into the county platting ordinances.

Flora and Fauna Resources

Overall little change is expected in flora and fauna resources. The destruction of plant and animal resources is expected on sites developed for residential, commercial, and industrial uses.

Land Use

The proposal will generally provide that future development be accommodated within the existing land use pattern.

Natural Resources

The proposal will help protect the county's natural resources by directing development away from the lands with the highest resources values.

Population

The proposal provides a sufficient amount of land to accommodate the projected future population.

Housing

The proposal will not affect the demand for housing, but will influence the patterns of housing development by encouraging the filling in of urban service areas.

Transportation and Circulation

The proposal is expected to generate an additional 12,500 vehicle trips per day by 1990. The current land use policies would generate the same number of trips each day by 1990.

The proposal encourages a policy of concentration around the urban areas, which would as a result, have a much greater affect on the "close-in" roads than on "rural" roads. At the same time, the amount of road surface which would have to be constructed or upgraded would be less than if intensive development were allowed to occur throughout the county.

According to the National Safety Council, the current county subdivision and short subdivision ordinances lack a number of provisions necessary to ensure that streets and intersections in new developments are safely designed. As a potential mitigating measure, an updated subdivision ordinance is recommended by the DEIS.

Public Services

The demand for services will grow as population increases. The cost of providing these services will be proportionate to the kind of development which is allowed. Planned growth which locates residential and commercial uses adjacent to urban areas, will result in the more efficient and less costly provision of these services.

Energy

The development accommodated by this proposal will increase demands for wood fuel, petroleum fuels, electricity, and natural gas. The land use pattern encouraged by the proposal will conserve transportation energy and, to a lesser extent, residential space heating.

The county will undertake a study to review what steps that could be taken to reduce energy consumption in new development. This study should partially mitigate the impacts of this proposal.

Utilities

The growth accommodated by the proposal will require expansion and reconstruction of the electrical distribution system in east county, expansion of the communication system, some expansion of the water systems, repair of the Montesano and Elma sewerage treatment plants and expansion of the sewer collection system, and a new solid waste disposal site (either a landfill, power generation facility or some other alternative.) As was noted in the discussion of the existing utility systems some of these improvements are underway or planned. These new and expanded utilities would also be required under the existing comprehensive plan and zoning ordinance because the proposal will not change the anticipated future population.

Aesthetics

The proposed policies would zone large portions of eastern Grays Harbor County for low density rural uses thereby preserving large areas of open space. The proposed Rural Residential and Rural Development zoning classifications applied to areas outside urban and built up areas, will also lend a continuity to the landscape which more intensive development could conceivably disrupt. The proposal would also permit conversion of scenic rural visits to residential, commercial, and industrial areas.

Archeological/Historical

In the course of land development, farming, or silvacultural activities, historical or archeological resources could be disturbed or destroyed.

C. ALTERNATIVES

Alternative A: Proposed Rural Lands Recommendations

The Rural Lands Recommendations seek to balance the need for a variety of development opportunities with the need to protect the county's resource based economy and rural character.

Alternative B: Partial Adoption of the Recommendation

This alternative proposes that the three zones together with the proposed plan map, the two goals and Policy 2 be adopted. The other Rural Lands Recommendation would be dropped. This alternative would have greater environmental impacts than Alternative A.

Alternative C: Proposed Recommendations with GD-II Policy and GD-10 Zone.

This alternative proposes that the entire package of Rural Lands Recommendations be adopted together with a GD-II Policy to provide increased protection to agricultural and forestry areas. The affects of this proposal are very similar to the impacts of the Rural Lands Recommendations with the exception that this proposal would somewhat reduce the conversion of highly productive commercial forest lands.

Alternative D: Less Restrictive Policies and Zones

This alternative would provide more areas zoned for one acre development, provide for a greater mix of uses, and promote expanded urban service areas. This alternative would also have policies with lesser drainage provisions and providing a lower level of protection to unique habitats and areas of historical and archeological significance. In addition to the adverse environmental impacts of the proposed Rural Lands Recommendation, this alternative would have some additional environmental impacts including increased groundwater pollution and small acreage development in areas without potable water.

Alternative E. More Restrictive Policies and Zones

This alternative would apply stricter criteria to determine areas suitable for small acreage development. The alternative would include policies designed to prevent the conversion of productive forest lands to uses with less economic productivity, provide greater limitations on stormwater runoff, encourage greater protection for important habitats, and provide for greater protection of historic and archeological resources. This alternative would have almost no major adverse environmental effects on natural systems. Its principal effect would be to reduce housing location choice. It is probably not feasible to adopt this alternative.

Alternative F: No Action: Existing Plans and Zones Retained

This alternative proposes the retention of the existing plan for east Grays Harbor County and the existing County zoning districts. The areas zoned "Old Agriculture" would remain in that zone and be rezoned on a case-by-case basis. No one acre minimum lot size zone would be adopted. This alternative would have more severe environmental impacts than the Rural Lands Proposals.

Alternative G: No Plan, No Zones

This alternative proposes the repeal of the County's existing plans and zoning ordinances. This alternative would have the most severe adverse environmental impacts of any proposal.

Given Grays Harbor County's long tradition of comprehensive planning and zoning together with the substantial economic, social, and environmental benefits provided by these activities; the no plan, no zones alternative is not a realistic alternative to the Rural Lands Recommendations.

Alternative H: Performance Zoning

Performance zoning is a method of regulating land uses by directly regulating their impacts. Where traditional zoning assures compatibility between uses and lessens potential problems by classifying uses into various districts based on their intensity and impacts, performance zoning directly regulates the anticipated impacts of development.

Performance zoning would replace the traditional use specifications and requirements with a set of empirically based numerical standards. Uses would generally be permitted as of right, provided they complied with the performance standards. Prior to approval, each development would be reviewed by the county planning staff.

A performance zoning ordinance could be developed which would have few environmental impacts. The principal impact would be to increase the costs of obtaining development permission and ordinance administrative costs.

5. DESCRIPTION OF THE PROPOSAL

A. Name and Sponsor of the Proposal: The East Grays Harbor County Rural Lands Study Recommendations. Grays Harbor County (unincorporated) is the sponsor. The Recommendations are described in this section, for the full text of the proposed Comprehensive Plan Elements and the proposed zones see the Rural Lands Study Part Two Recommendations. Available from the Grays Harbor County Planning Department.

B. Location of the Project: The area of East Grays Harbor County, primarily its rural lands, and excluding other lands currently designated as agricultural by the Grays Harbor Comprehensive Plan.

C. Related File Numbers: None.

D. Phasing of Construction: The proposal will be gradually implemented as development proceeds under the proposal's policy framework. Each construction project will be subject to the requirements of SEPA to the extent the impacts of the project are not included in this statement.

E. Major Features of the Proposal: The proposal is a legislative action to revise the current Grays Harbor County Comprehensive Plan and Zoning Ordinance as they pertain to East Grays Harbor County. The most important aspect of these proposals is a Proposed Rural Lands Element of the Grays Harbor Comprehensive Plan which provides goals, objectives, and policies to guide future development of the rural lands. The proposed plan element also designates different areas for a range of development types based upon each areas development potential and constraints. These designations are shown on Map 3A, the Generalized Comprehensive Plan Map.

The goal of this element is to promote an efficient and appropriate use of rural lands consistent with the lands capacity to accommodate development. The goal would be implemented first by a series of objectives upon which future land use decisions should be based. The objectives address a range of factors which provide development opportunities or constraints. The thrust of these objectives is to focus future development into an orderly pattern which realizes available opportunities while minimizing both public and private costs and avoiding significant natural hazards or resources. These goals and objectives recognize the need to balance these concerns and seeks to provide guidance as to how a desirable balance can be provided.

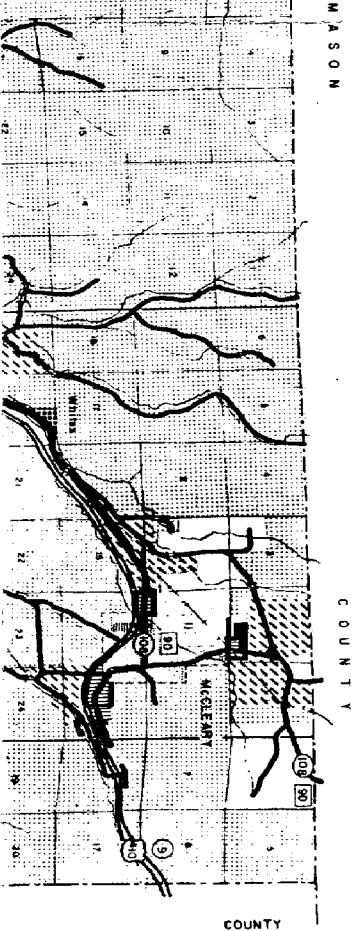
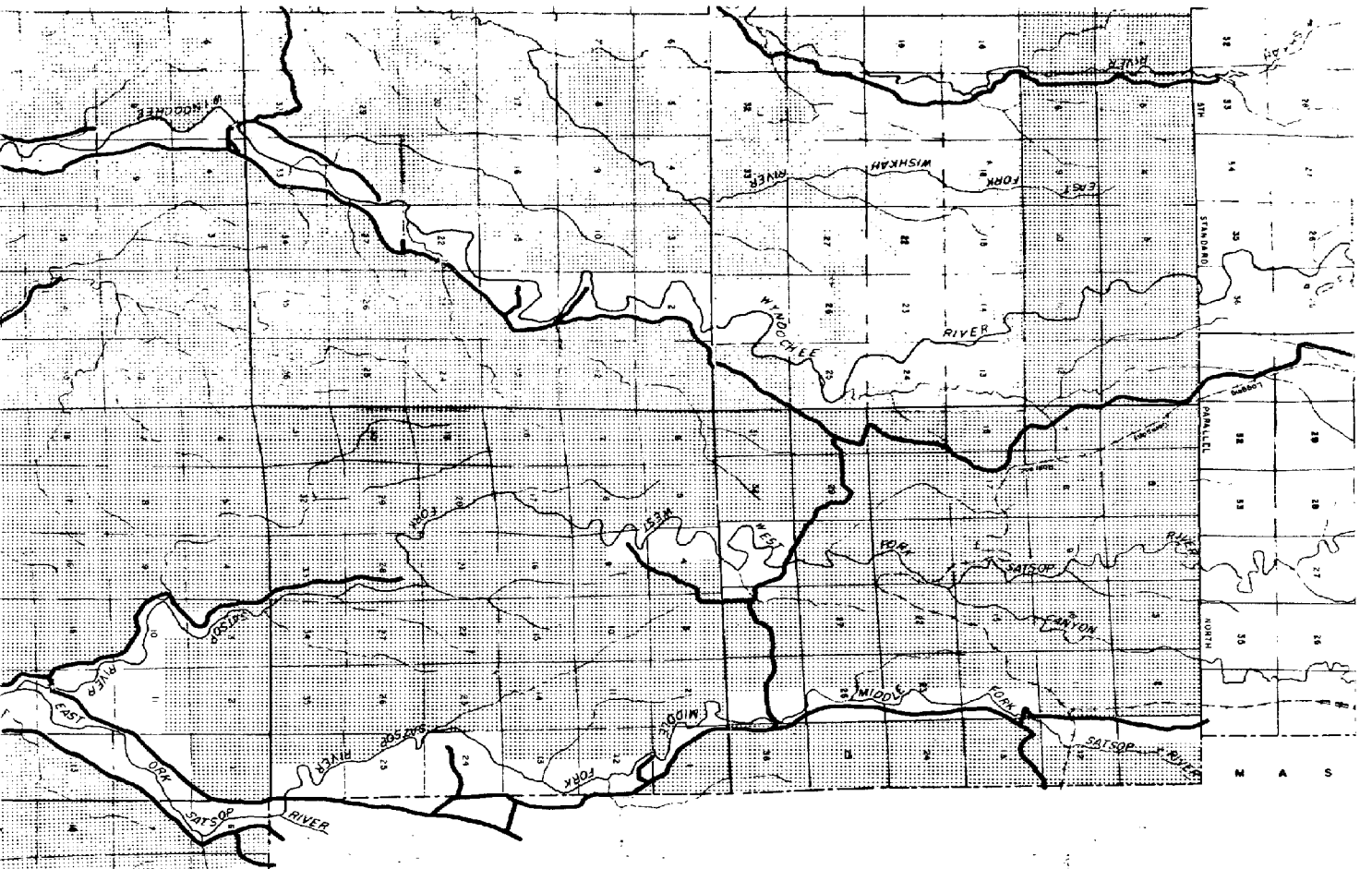
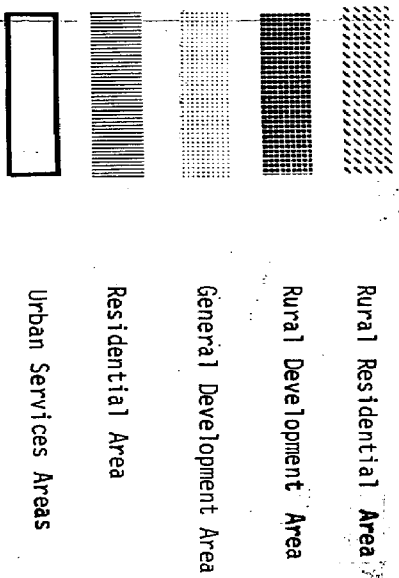
These objectives would be complimented by policies and the designation of various areas into appropriate use categories. Three use categories are proposed and applied to various areas of the Rural Lands:

- (1) A Rural Residential Area which would provide areas for small acreage rural residential uses. This designation is applied to areas with available water (either geologically suitable for wells or access to a community water system), areas where the need to travel over substandard roads is minimized and where residential related services can be provided. This designation was not generally applied to areas which would require major public expenditures to support development, areas prone to flooding or erosion, areas which have poor soil quality for development, agricultural areas or areas with other natural resource qualities, or areas where groundwater resources may be subject to contamination. The overall density of the

MAP 2A

RURAL LANDS ELEMENT

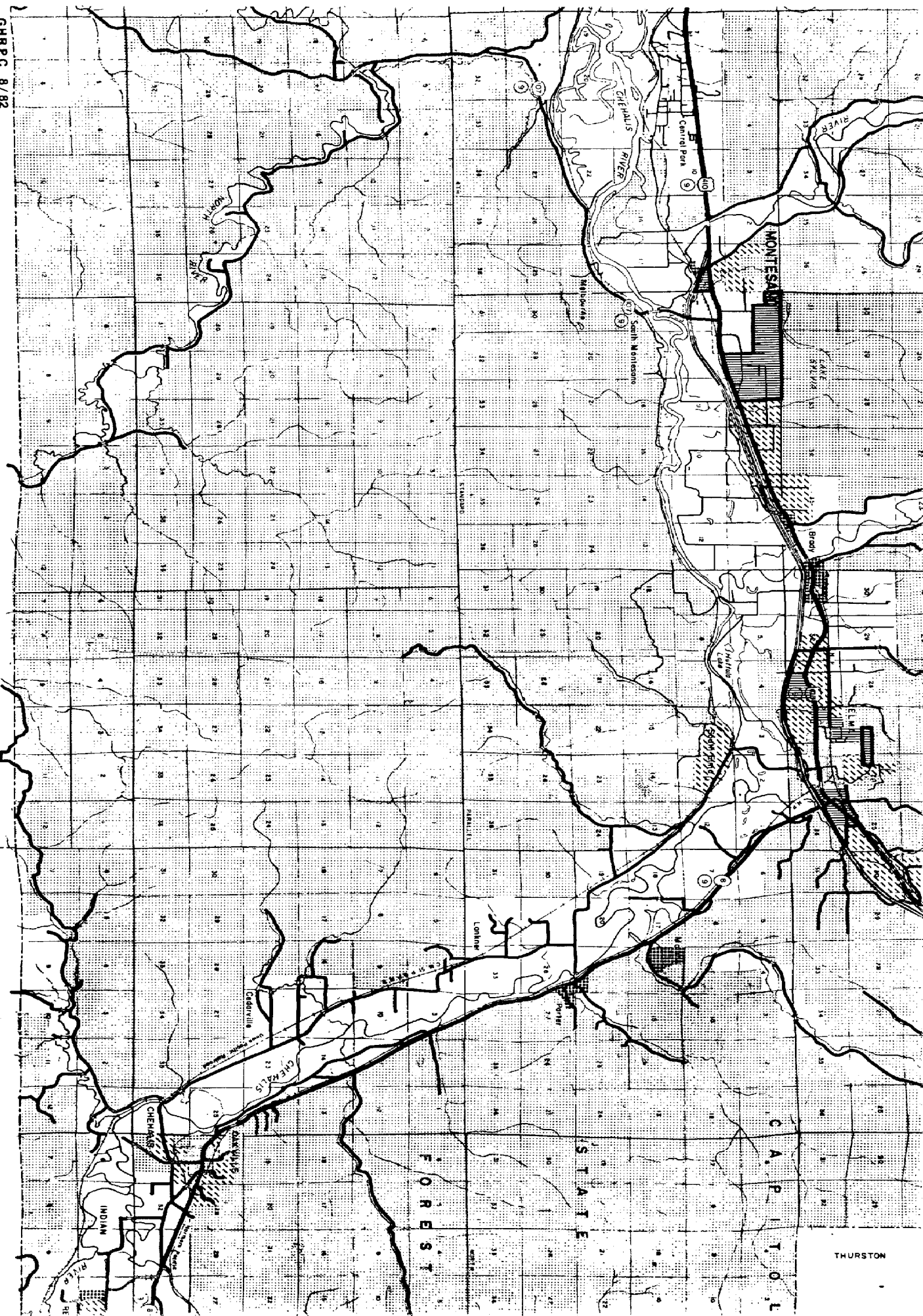
COMPREHENSIVE PLAN MAP



"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management

LEWIS

COUNTY

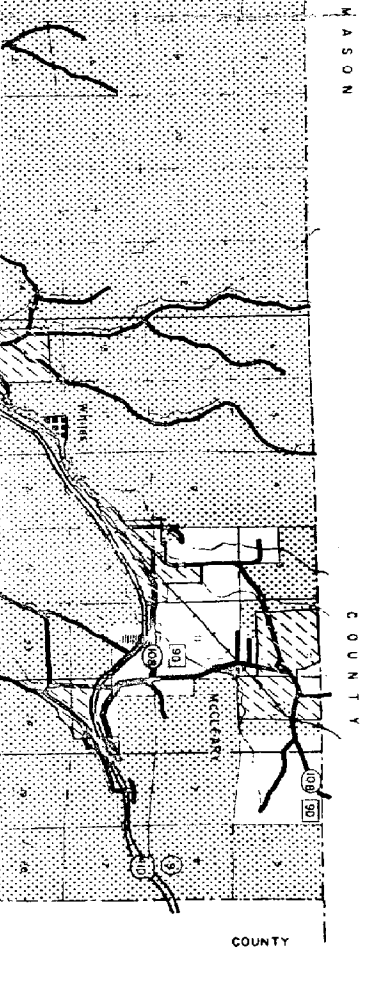
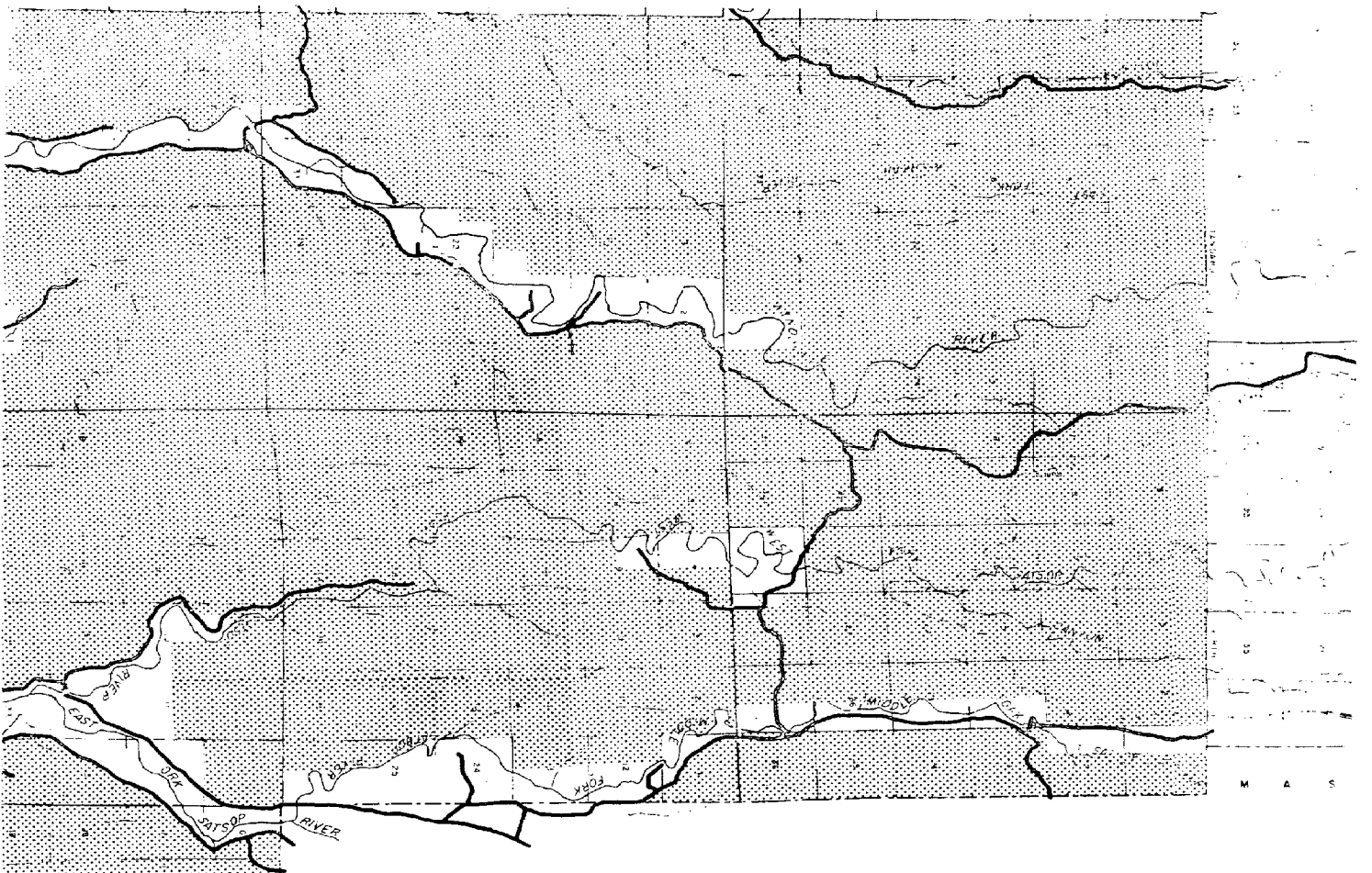


THURSTON

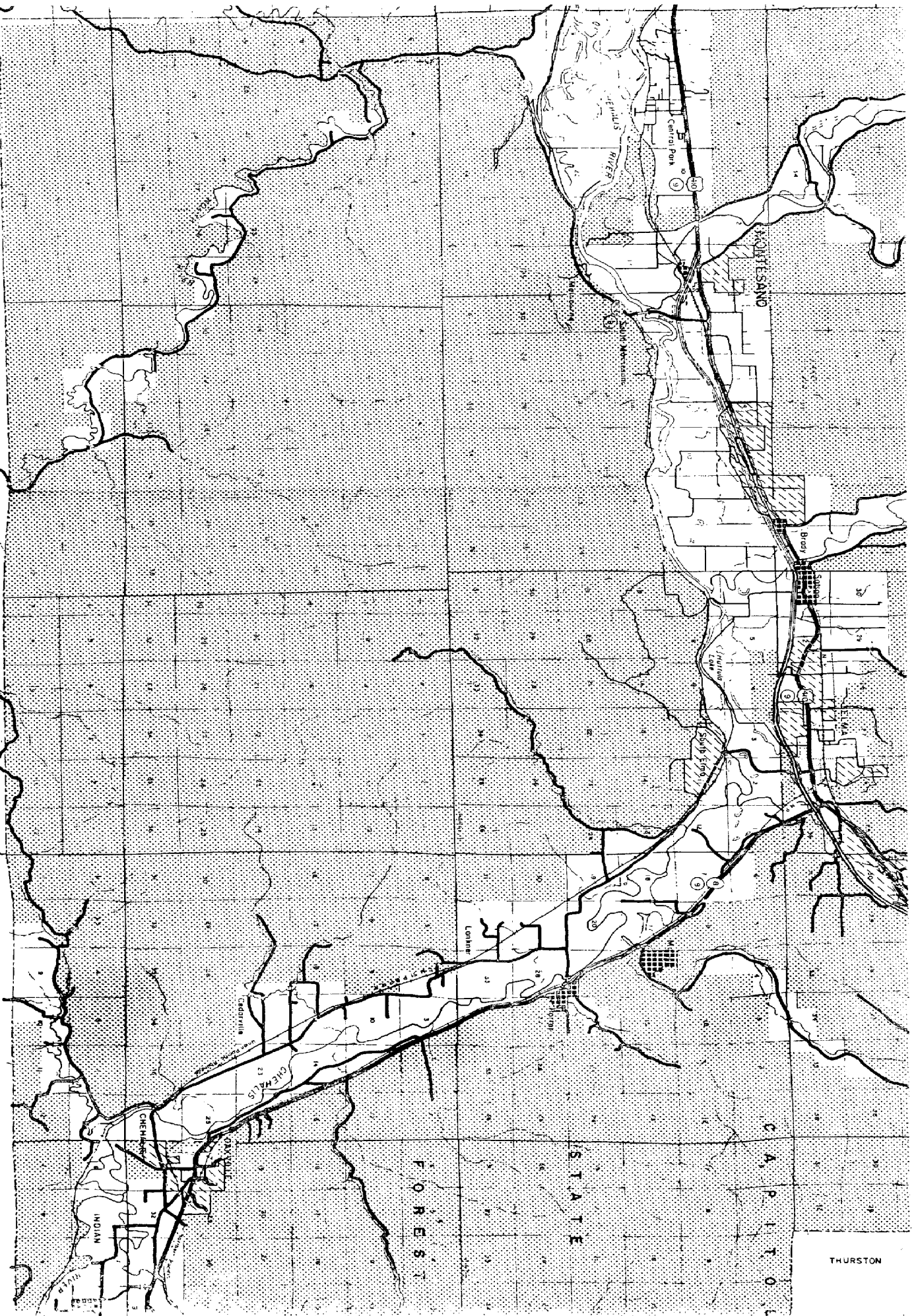
MAP 2B

GENERALIZED RURAL LANDS ZONING MAP

- RURAL RESIDENTIAL (RR)
- GENERAL DEVELOPMENT-1 (GD-1)
- GENERAL DEVELOPMENT-5 (GD-5)



"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."



Rural Residential Area would be one unit per acre.

- (2) A Rural Development Area which would be applied to existing development centers where a variety of rural uses may be permitted on relatively small small acreages. Areas designated for these uses are capable of supporting rural development centers with appropriate services. Areas subject to natural hazards or areas adjacent to agricultural areas were avoided. Compatible commercial and industrial development would be permitted in these areas. The overall density of the Rural Development Area would be one unit per acre.
- (3) A General Development area which would accommodate less intensive uses with residential uses limited to one unit per five acres. While rural commercial uses customarily accessory to rural residential uses would be permitted, and industrial uses dependent on natural resources would be allowed if found compatible with other uses, the primary use of these areas would be for lower intensity residential, forestry, recreational, or agricultural activities. This designation is applied to areas with a low level of public facilities and services, areas subject to natural hazards or where intense use would conflict with natural resource production. (This area is generally consistent, with some limited modification, to an existing zoning classification and consequently does not require a new zone for implementation.)

In addition to designating these areas, the Rural Lands Element also includes policies to guide the specific location of commercial and industrial uses and the development of public facilities within each of these use classifications. The major topics addressed by the policies include:

- a) Limiting extensive development of water and sewer system to areas near incorporated cities.
- b) Clustering residential uses consistent with the other policies would be encouraged.
- c) Natural drainage systems would be protected.
- d) The intensity and location of commercial development to be permitted would be related to the accessibility of those uses to their markets.

In addition to the rural lands element this DEIS also addresses the implementation of that element by means of the addition of two new zoning classifications proposed to be adopted to the county zoning ordinance and by modifying existing General Development District. Each of these classifications correspond to the use designations detailed in the Rural Lands Element. These zones are proposed to be applied to the areas outlined on Map 2B. The provisions of these zones are summarized in Table 1. Appendix A displays the acreage proposed for inclusion in each zone.

The Rural Lands Element, as well as other planning elements of the county comprehensive plan, would be coordinated with the comprehensive plans of other jurisdictions by the

proposed Community Plan Coordination Element. This element adopts the comprehensive plans of five cities by reference (the plans of Elma, Montesano, Oakville, the Town of McCleary, and Cosmopolis.) Four of these plans have been analyzed by separate environmental impact statements prepared by each of the cities. The Cosmopolis plan was reviewed by the city and found not to be a significant action. The Coordination Element designates the areas identified to be served by urban services in the City and Town plans as urban service areas and as such these areas would be the focus of more intensive development in the unincorporated areas of the County. The coordination element also describes procedure for reviewing development proposals near incorporated areas to insure coordination with affected cities and towns.

As a companion to both the Rural Lands Element and the Community Plan Coordination Element, a Comprehensive Plan Policy to guide the county's existing R-1 and R-2 zones is proposed. The Residential area is designed to integrate the R-1 and R-2 zones with the proposed rural lands zoning and the adopted agricultural zones. The Residential Area will provide areas for low and moderate density residential uses. This designation is applied to the designated urban services areas of the Cities and Towns and other areas which have all of the following characteristics (i) the land is adjacent to the corporate limits of the city or town or a developed unincorporated area, (ii) an adequate public water system is available to serve the area, (iii) either a sewer system is available or the area is suitable for on-site septic systems at the permitted density, and (iv) the fire and school systems can accommodate the growth resulting from development of the area. This designation was not generally applied to areas subject to flooding, areas subject to river bank erosion, areas without adequate public facilities or services, areas adjacent to planned agricultural lands, or areas of high resource value. This designation will be implemented by the existing Restricted Residential (R-1) and General Residential (R-2) zoning districts. The text of these two districts will not be modified by the proposed designation.

The Coordination Element taken with the Rural Lands Element, the Residential designation and the Adopted Agricultural Element would provide an orderly, coordinated development pattern for the eastern part of Grays Harbor County. This pattern would encourage intense development in areas where urban services can be economically provided and encourage small acreage rural development in areas in which significant natural hazards or resources are absent. In so doing, the natural resources and rural character of most of this region would be conserved.

F. Relationship to Other Plans: As noted, the proposal takes into account and is closely coordinated with the adopted land use plans of the towns and cities located in the affected areas. The element also compliments the County's Adopted Agricultural Element.

The Rural Lands proposals are a refinement of the existing Grays Harbor County Comprehensive Plan and is in general consistent with the commercial and industrial designations of the plan.

The proposals have also been coordinated and are consistent with Grays Harbor County's functional plans including the Six Year Road Plan and Water and Sewer Plan.

TABLE 1
SUMMARY OF PROPOSED RURAL LANDS ZONING DISTRICTS

| PROPOSED ZONE | Rural Residential (RR) | General Development 1 (GD-1) | General Development 5 (GD-5) |
|----------------------|---|---|---|
| PURPOSE | Permit rural residential uses on small acreages in appropriate areas. | Strengthen unincorporated rural communities. | Permit a variety of uses appropriate for rural areas at densities consistent with the areas physical characteristics and available services. |
| PERMITTED USES (1) | <ul style="list-style-type: none"> • Single family dwellings (includes mobile homes). • Growing and harvesting of forest and agricultural products and animal husbandary. • Maintaining one heavy truck. | <ul style="list-style-type: none"> • Single family dwellings (including mobile homes). • Public and semi-public uses. • Growing and harvesting of forest and agricultural products. • Commercial uses of less than 5,000 sq. ft. adjacent to other commercial uses. • Maintaining one heavy truck. | <ul style="list-style-type: none"> • Single family dwellings (including mobile homes). • Public and semi-public uses. • Growing and harvesting forest and agricultural products. • Maintaining one heavy truck. • Game and fish rearing and management. • Power Plants. |
| CONDITIONAL USES (2) | <ul style="list-style-type: none"> • Schools & Churches. • Mobile Home Parks. • Kennels. • Veterinary Clinics. • Cemeteries. • Recreational Facilities. • Clustering of dwelling units. • County Fairgrounds. | <ul style="list-style-type: none"> • Mobile Home Parks. • Recreational Vehicle Parks and campgrounds. • Multi-family dwellings. • Commercial uses of less than 5,000 sq. ft. • Recreational Facilities. • Forest product processing plants. • Clustering of dwelling units. | <ul style="list-style-type: none"> • Recreational Vehicle Parks and and campgrounds. • Automobile wrecking. • Sanitary fill sites. • Commercial uses of less than 5,000 sq. ft. provided other commercial uses will not be encouraged. • Recreational Facilities including motor vehicle sport facilities. • Forest product processing plants. • Clustering of dwelling units. |
| MINIMUM LOT SIZE | 1 Acre Minimum | 1 Acre Minimum | 5 Acre Minimum |
| (3) LOCATION | <ul style="list-style-type: none"> • Bench areas. • Areas near cities and towns where water systems are not available. • Pradries not suited for farming. | <ul style="list-style-type: none"> • Unincorporated rural communities such as Malone and Porter. | <ul style="list-style-type: none"> • Remote rural areas. • Areas subject to significant natural limitations, such as lack of potable groundwater. |
| RESULT | • Rural residential uses on small acreages. | • Encourages the continued development of unincorporated rural communities. A "small town" land use pattern. | • Mix of rural uses including: residences, saw mills, shake mills, forests, subsistence farming, other resource based industries, and rural recreation. |

(1) Does not include all permitted uses.

(2) Does not include all permitted uses and does not include the conditions required before conditional uses will be granted, if any.

(3) This is a description of the areas proposed for each zoning classification, not a listing of the criteria for designation. See the appropriate Proposed Comprehensive Plan Area for the designation criteria.

6. EXISTING ENVIRONMENTAL CONDITIONS AND ANTICIPATED IMPACT OF THE PROPOSAL ON THE ENVIRONMENT TOGETHER WITH POTENTIAL MITIGATION MEASURES

INTRODUCTION

There have been several studies done on the area's existing environmental conditions and these were consulted in this statement's development including:

Grays Harbor Erosion Management Study, Grays Harbor Regional Planning Commission;
The Report of the County Agricultural Study Committee;
The Environmental Impact Statement for the Washington Public Power Supply System Nuclear Reactors 3 and 5 (Satsop EIS);
The Comprehensive Plans and the Final Environmental Impact Statements for the Comprehensive Plans of the Cities of Elma, Montesano, and Oakville, and the Town of McCleary;

And other works on file at the Offices of the Grays Harbor Regional Planning Commission at 2109 Sumner Avenue, Suite 202, in Aberdeen, Washington 98520.

A. ELEMENTS OF THE PHYSICAL ENVIRONMENT

1.1 Existing Conditions of the Earth

Geology

At the beginning of the Eocene epoch, some 58 million years ago, most of Western Washington was under water, the shoreline of the Pacific Ocean being where the Cascade Mountains are today. Following that time there have been four major geological events which shaped the land in East County. During the first period, extensive volcanic action occurred from the Klamath Mountains north to Vancouver Island. At first activity happened underwater until small volcanic islands, perhaps like the Hawaiian Islands, appeared. Gradually the area between these islands and the Cascades filled in with sediment from the volcanic rocks.

The next period saw a massive folding of this area's surface and the birth of the Cascades, the Olympics, and the Coast Range. Through both of these periods, part of what is known as the Tertiary period, the Chehalis River maintained its general course between the Olympics and the Willapa Hills.

Following this time, came the Ice Ages. The climate, formerly lush and subtropic, turned cold. A mile-thick sheet of ice came from British Columbia south into Puget Sound. Though the glaciers ended at Olympia, the East County area was not left unaffected. Water from the Puget Sound ice was kept from its normal drainage and spilled over the Black Hills by way of the Satsop River, Cloquallum Creek, the Mox-Chehalis and the Black River into the Chehalis Valley on its way to the ocean. These rivers, with much greater flows than at present, deposited large amounts of outwash in the area, as did the Olympic

borne rivers: the Wynoochee, the Wishkah, and the Humptulips. In opposition to these latter streams, the glaciofluvial deposits from the Vashon (Puget Sound) Glacier contained both local volcanic rock and granite from British Columbia and the North Cascades. These deposits begin upstream from the Wynoochee.

Finally, the Recent (by geological standards) Period has added the alluvial soils found in the river valley bottomlands and cut away at the Ice Age deposits of sand and gravel that covered the valleys.

These geological processes resulted in three types of geological structures: river deposits, terrace deposits, and Tertiary bedrock. The river deposits are located in the bottom of the major river valleys including the Chehalis, the Satsop, the Wynoochee, the North River and the Mox Chehalis. The terrace deposits are found on the flat benches along the Chehalis River Valley, along the lower reaches of the Cloquallum Creek east of Elma, and north and west of the town of McCleary. The Tertiary bedrock deposits are located in the hills above the river valleys.

These geological structures affect the potential for development in two ways: (1) geological structures contain groundwater resources which supply the potable water needed for development and (2) geological structures give strength to the soils above them, soils which then support structures and other types of development. Groundwater production will be discussed in part 3 of this section, Groundwater Quantity and Quality. Some of the Tertiary bedrock of sedimentary origin is unstable and prone to landslides and other forms of mass wasting.

Soils in East County fall into three general types: alluvial, upland, and mountainous. The alluvial soils are the river borne sediments which generally correspond to the 100 year floodplain and are the County's prime agricultural soils. They are most often found in the Satsop, Wynoochee, and Chehalis Valleys and associated creeks such as Wildcat and Cloquallum Creeks. The upland soils occur just out of these valleys on a series of terraces or benches and continue generally to 500 feet elevation. The upland soils are generally composed of glacial materials and can vary widely in their characteristics. They are usually good timber producing soils and some are excellent for growing farm crops because of their superior drainage. However, many of those soils are excessively well drained requiring an extensive irrigation and fertilization program in order to grow crops. The mountainous soils occur about 500 feet in elevation, generally on steep slopes. These soils are not farm productive, but are productive timber lands.

Soil Suitability for On-Site Waste Disposal

Most of the soils in eastern Grays Harbor County have severe limitations on the use of septic tanks for on-site sewage disposal. A small area is classified as having moderate limitation with the remainder having slight limitations for on site sewage disposal. The areas rated moderate to slight (those areas with the best suitability for septic systems) are found on the benchlands

and in pockets in the alluvial plains that are not prone to flooding. Major concentrations of areas rated as having moderate and slight limitations for septic systems are found: west of Brady, between Satsop and Elma, east of Elma, at South Elma, at Meadowood, west of McCleary, north of McCleary and south of Oakville. The soils of the hills surrounding the valleys and benches are, with very few exceptions, poor sites for septic systems.

Because most of unincorporated eastern Grays Harbor County is not served by sewers, the limitation for septic systems imposed by the soils is a major barrier to development. Localized groundwater pollution from septic systems has been reported in various locations in east county. This pollution is termed septic tank leachate. The major problem areas tend to be suburban areas developing at a density of more than one unit per acre which lack sewer systems, although septic tank leachate has also been identified in more rural areas. The two major problem areas for septic tank leachate in eastern Grays Harbor County are the Alder Lake area east of Montesano and the Garden Hill (Strawberry Hill) area in and around North Elma.

In recent years a new problem has arisen. Soils that were thought to be very suitable for septic systems are proving to be "too good." The soils are draining too fast and not allowing the septic tank effluent time to be cleansed by the soils biological activity. The effluent then reaches the groundwater table posing a potential threat to groundwater supplies. In east Grays Harbor County two areas with this problem have been identified: the area known as Sky Acres north of McCleary, and the area immediately south of the freeway at Brady.

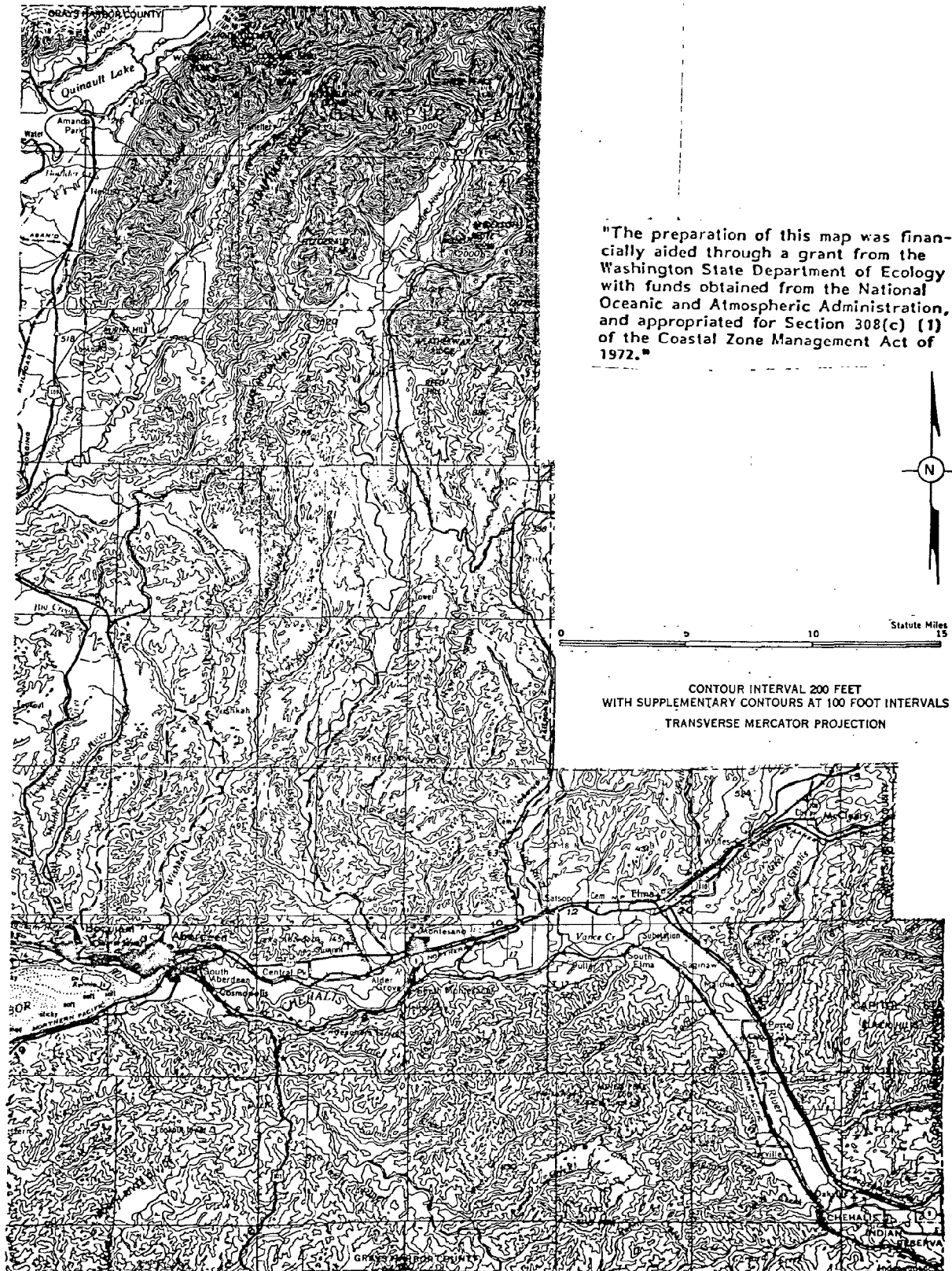
Prime and Unique Soils

The Rural Lands contain an estimated 6,000 acres of land classified as prime and unique agricultural soils by the U.S. Department of Agriculture Soil Conservation Service. These prime agricultural soils represent an approximately 1.5 percent of the land within the study area. Prime agricultural soils are those soils most suitable for cultivation based on their physical properties. Most of these prime agricultural soils in east Grays Harbor County are planned and zoned for long term farm use. Because of proximity to incompatible uses, distance from farming areas, and ownership patterns most of the prime agricultural soils within the Rural Lands are not suitable for farming. This point is reinforced by the fact that less than 500 acres of the prime soils in the Rural Land areas are currently farmed.

Topography

Map 3 displays the topography of eastern Grays Harbor County. The eastern portion of the County is characterized by broad river valleys, relatively flat benches lying along the river valleys and gradually higher elevations with rugged hills beyond. This pattern is somewhat different in the McCleary area with a prairie extending from north of the city limits to beyond the county line.

MAP 3
TOPOGRAPHY OF EASTERN GRAYS HARBOR COUNTY



Erosion

The 1974 Grays Harbor Erosion Management Study cites two main types of soil erosion that occur in the study area: sheet and rill erosion and riverbank erosion. Because of the high level of rainfall in east Grays Harbor County, (between 50 and 80 inches depending on location), erosion is a major problem in the county. Sheet and rill erosion causes heavy sedimentation in the rivers according to the study. As much as 85 percent of the fine silt and sand carried in suspension by the study streams originate from this type of erosion. These sediments increase from areas which are denuded of their natural vegetative cover. Two major causes of sheet and rill erosion are poor road construction and logging practices.

The same study estimated that nearly 44 acres of land area is lost from riverbank erosion each year in Grays Harbor County. Riverbank erosion results from rapid rises in river discharges after periods of heavy rains. These floods erode land and undermine roads and bridges. The Grays Harbor Erosion Management Study estimated, in 1974, annual erosion caused damage to land and structures at \$140,000. This figure includes both the private costs of lost land and buildings and the public costs from damaged bridges, roads, and other public facilities.

The Grays Harbor Erosion Management Study inventoried riverbank erosion along the Chehalis, Wynoochee, Satsop, Wishkah, Hoquiam, and Humptulips Rivers and Cloquallum and Wildcat Creeks. The erosion sites were classified as having slight erosion, moderate erosion or severe erosion based on the degree of erosion, economic considerations, (such as threats to valuable lands or structures), environmental considerations, and social considerations (such as loss of public facilities, utilities, roads, and bridges).

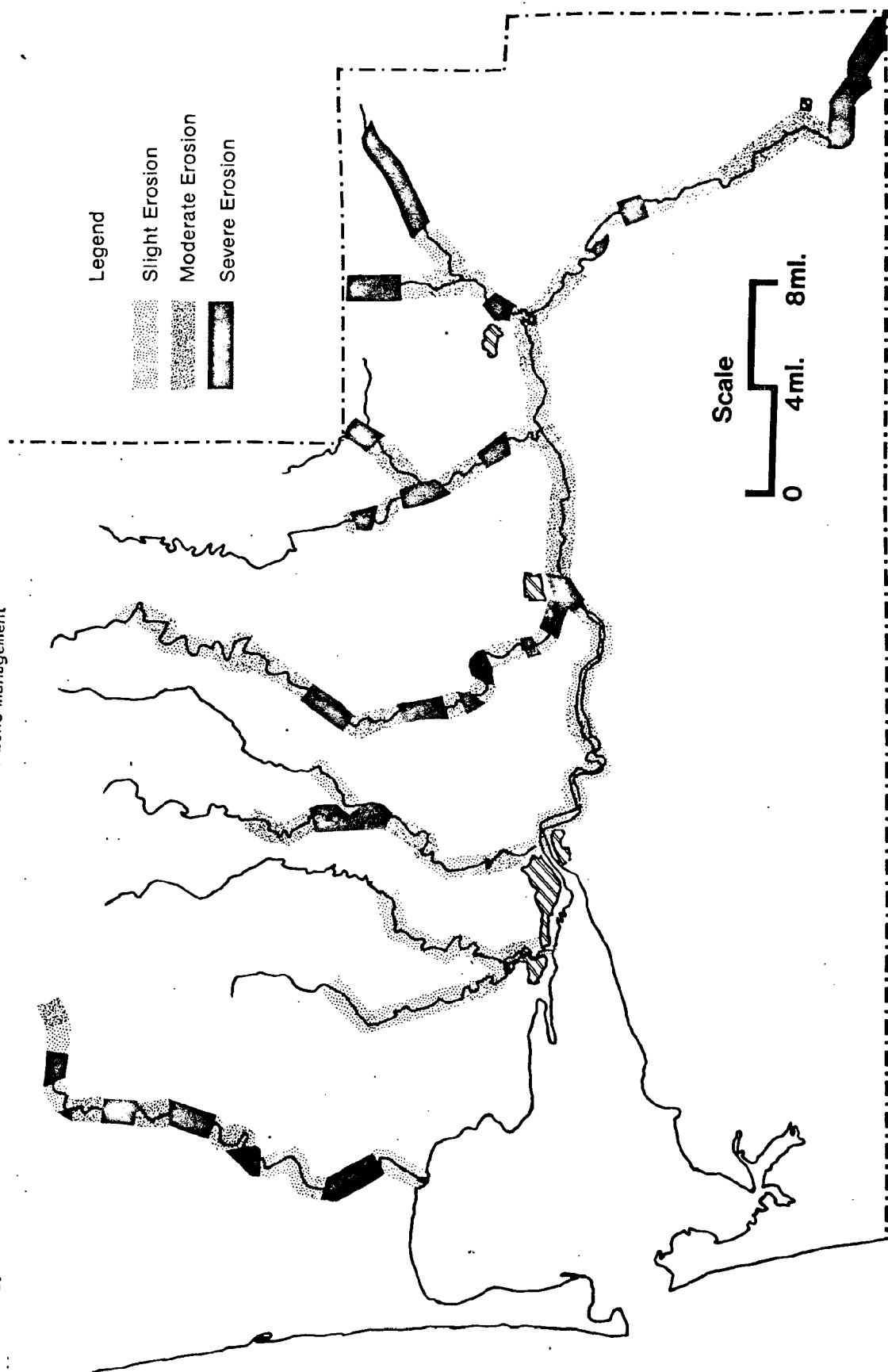
The map of "Generalized River Erosion Priority Areas" displays the results of this classification. Of special note is the moderate erosion along the Satsop River and the severe erosion along the Upper Wildcat and Cloquallum Creeks.

The Erosion Management Study recommendations include the development of standards to protect against modifications to the river channel and banks which may increase erosion, controls designed to limit construction in the floodways thereby reducing erosion damage, and to plan for uses adjacent to actively eroding riverbanks which will minimize erosion and potential damage.

1.2 Anticipated Impact of the Proposal on the Earth

The proposal has been closely coordinated with the quality of soils, geological structures, and the potential hazards related to erosion and mass wasting. The policies and use designations of the proposal would direct development away from soils with poor qualities to support intensive uses and away from hazardous areas. While in the process of balancing competing concerns, the proposal may allow some inappropriate use of soils, in general the impact of the proposal would be to significantly reduce the potential of development occurring on geological structures and soils not suitable for such intensive use.

"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."



Map 4 Generalized River Erosion Priority Areas

Anticipated Impact on Soil Suitability for On-Site Waste Disposal

The Rural Lands policies and zoning districts would, overall, direct development towards those areas best suited for on-site waste disposal. A primary criteria for applying the two new one acre zones was the area's suitability for septic tanks. Most of the areas identified as having severe limitations for septic systems are zoned for a minimum lot size of five acres. Nevertheless, one area with the potential for septic problems was zoned for one acre development -- the area east of Montesano between Roup Road and Winkleman Road.

Zoning this area for a larger minimum lot size would probably be difficult given the existing development pattern of this area. The existing zoning of this area requires a 10,000 square foot minimum lot size and is too dense given the soil limitations of the area.

It is uncertain what effect the one acre zoning around Sky Acres north of McCleary will have on the highly permeable soils in that area. These soils are so permeable that septic tank effluent may reach the groundwater table before it is adequately cleansed by the soils biological activity. A significant portion of the area is currently zoned for a minimum lot size of 10,000' square feet and relatively intense development has occurred in the area. If these trends continue there is a high probability that the groundwater in the area which the residents use for drinking water, will become contaminated. Zoning the area for one acre development would provide less density than existing land use trends, but may still result in groundwater pollution.

The Rural Land Proposals will retain the existing zoning for the septic tank leachate problem areas at Alder Lake east of Montesano and at Garden Hill in and around north Elma. These areas are within the urban services areas of Montesano and Elma respectively. City water and sewer services are planned for both areas. The proposals contain policies encouraging the provision of water and sewer services to these areas. This strategy will eventually correct the septic tank leachate problem in these areas.

Anticipated Impact on Prime Agricultural Soils

Within the urban, suburban, and rural development centers where growth is encouraged to occur by the proposal, there are approximately 2,200 acres of land classified as prime agricultural land by the Soil Conservation Service which would, over time, be subject to conversion to other uses. Approximately 300 acres of the development centers are actively farmed and are planned for conversion to other uses.

Anticipated Impact on Soil Disruption and Erosion

Soils in some areas (areas used for forestry or agricultural uses) would be subjected to standard agricultural and forestry practices, i.e. road building, timber harvesting, plowing, discing, and general cultivation. Soils in those areas designated for development would be disrupted by excavation and grading associated with construction of roads, buildings, and homes. This disruption can cause erosion and stream siltation. This is particularly true of road construction in exempt divisions of lots greater than five acres. These divisions are not regulated in Grays Harbor County nor is the design and construction

of the roads which serve the lots in the development. Often these roads are poorly designed, constructed, and maintained. The inadequate design and poor materials lead to erosion and the siltation of streams and rivers. This siltation can have a significant negative impact on salmon spawning beds -- lessening production of this major resource. The erosion and siltation from the poorly designed and constructed roads within exempt five acre developments often exceeds the erosion from logging roads which are generally better designed and constructed given their relative traffic volumes. Soil disturbance, erosion and stream siltation also results from poor development practices, such as clear cutting and clearing and grading and then not revegetating the cleared areas. Because the Rural Lands Proposals will change 30,000 acres from the 1969 Agricultural District to districts with minimum lot sizes of five acres and to a lesser extent one acre, the potential for soil disturbance, erosion, and stream siltation will increase.

Disruption of soils would be greater in the urban, suburban, and rural service centers that the proposal recommends be used for the more intensive commercial, industrial, and residential uses. As these uses develop their soils would be subjected to the usual impacts associated with those developments. Some of these areas designated by the proposal are currently subject to these kinds of impacts. Other areas which the proposal designates to be used for more intensive uses will experience increased soil disruption. Because developers with the smaller lots commonly found that the urban, suburban, and rural service centers are subject to review by the county, soil disruption due to road construction is less than in the exempt five acre developments. Soil disruption is also lessened because the areas designated for suburban and rural service centers require less preparation, have less slope, and are generally more suitable for development. Some sheet and rill erosion and the resulting stream and river siltation will probably occur because of poor development practices. The county currently has no ordinance which adequately addresses the problem of poor development practices.

1.3 Potential Mitigation Measures for Adverse Impacts on the Earth

Since overall, the proposal will reduce the potential of adverse impact of the quality of geology and soils, the proposal itself assists in mitigating potential problems. The potential impacts of the proposal suggest several mitigating actions that could be undertaken by the county. The county should adopt a review procedure for the currently exempt five acre developments together with road standards to ensure that the roads and other facilities in such developments are adequately designed, constructed, and maintained. The county could adopt requirements to discourage poor development practices such as clearing and then not stabilizing areas being developed. These measures would help to minimize necessary erosion and stream siltation. This last measure may not be feasible at present.

In addition, the County Health Department could lessen the potential for septic tank leachate impacts by closely monitoring problem areas. The minimum lot size and zoning of one acre for the Sky Acres area north of McCleary should also be reviewed.

2.1 Existing Condition of Air Resources

Air Quality

Although air quality in eastern Grays Harbor County is generally good, the only monitoring station in the area (located at Elma) has exceeded State and Federal air pollution standards for suspended particulates. Summary data for suspended particulate emissions published by the Olympic Air Pollution Control Authority show that Elma's air quality has deteriorated significantly since 1970.

Suspended particulates, often called fugitive dust, are particles in the air that do not readily settle to the ground. The particles are normally less than 100 microns in size. The Olympic Air Pollution Control Authority operates a high volume air sampler on the roof of the City of Elma's ambulance garage.

The data collected by the Authority's air sampler show that the annual geometric mean for the suspended particulates increased from 24 ug/m³ in 1970 to 35 ug/m³ in 1981. As the suspended particulate annual summary illustrates, this increase began prior to the Satsop Power Project and appears to be related to the region's economic cycle. During poor years for the timber industry, such as 1975 and 1981, suspended particulates are down (although they are higher than the 1970 level). During good economic years suspended particulates are up. During the spring and summer of 1980, Elma exceeded the Federal twenty-four hour suspended particulate air pollution standard on four sampling dates. These violations are thought to be caused by the eruption of Mount St. Helens.

More significantly, Elma exceeded the State suspended particulate standards in March of 1981. The Grays Harbor County HV-suspended particulate graph shows the recent particulate air pollution trends.

Probable causes of the suspended particulate air pollution include industrial activities such as shake mills, agricultural operations, traffic (particularly traffic traveling on gravel roads), gravel extraction and transportation, and silviculture practices such as slash burning.

Areas further removed from industrial activities probably have lower suspended particulates and better air quality while areas near forest products mills or near heavily traveled gravel roads could have poorer air quality.

Odor

The presence of odor is mostly associated with livestock, agricultural practices and, in certain localized areas, shake mills. Such odors often conflict with residential uses.

Climate

Grays Harbor County has a mid-latitude, west coast, marine type climate with cool, dry summers and mild, wet, and rather cloudy winters. Weather in this

area is determined by the terrain, by the area's proximity to the ocean, and by the position and intensity of semi-permanent high and low pressure centers over the North Pacific. In summer, the predominant northwesterly air flow from the high pressure system in the Gulf of Alaska brings cool, relatively dry weather while in winter, the low pressure system located approximately 1,000 miles off the Oregon Coast sends warm, moisture laden air in from the southwest. Throughout the year the Cascade and Rocky Mountains shield the area from outbreaks of cold, arctic air in the winter and hot dry air in the summer.

Two of the most influential aspects of the County's climate are temperature and precipitation. Being near the ocean sheltered from the east, this area has a relatively small variation in temperatures between winter and summer. The East County area averages a high of 76° and low of 50° for the month of July while for January, the high is 45° and the low is 31°. Little of the precipitation is in the form of snowfall, and the average growing season (time between frosts) is 180 days.

The area is well known for its rainfall. Average precipitation in the County ranges from 50-60 inches a year in the south-eastern corner of the County and 70-90 inches along the coast to over 220 inches a year at the upper end of the Wynoochee River Valley in the Olympic Mountains. Precipitation of this magnitude makes the area one of the wettest places in the contiguous United States.

But not all of it falls at once. Eighty percent (80%) of all precipitation in East County falls from October to March while over 45% of all rain falls during November, December, and January. July and August, besides being the warmest months, are also the driest averaging 1.25 and 2.02 inches per month, respectively.

2.2 Anticipated Impact of the Proposal on the Air

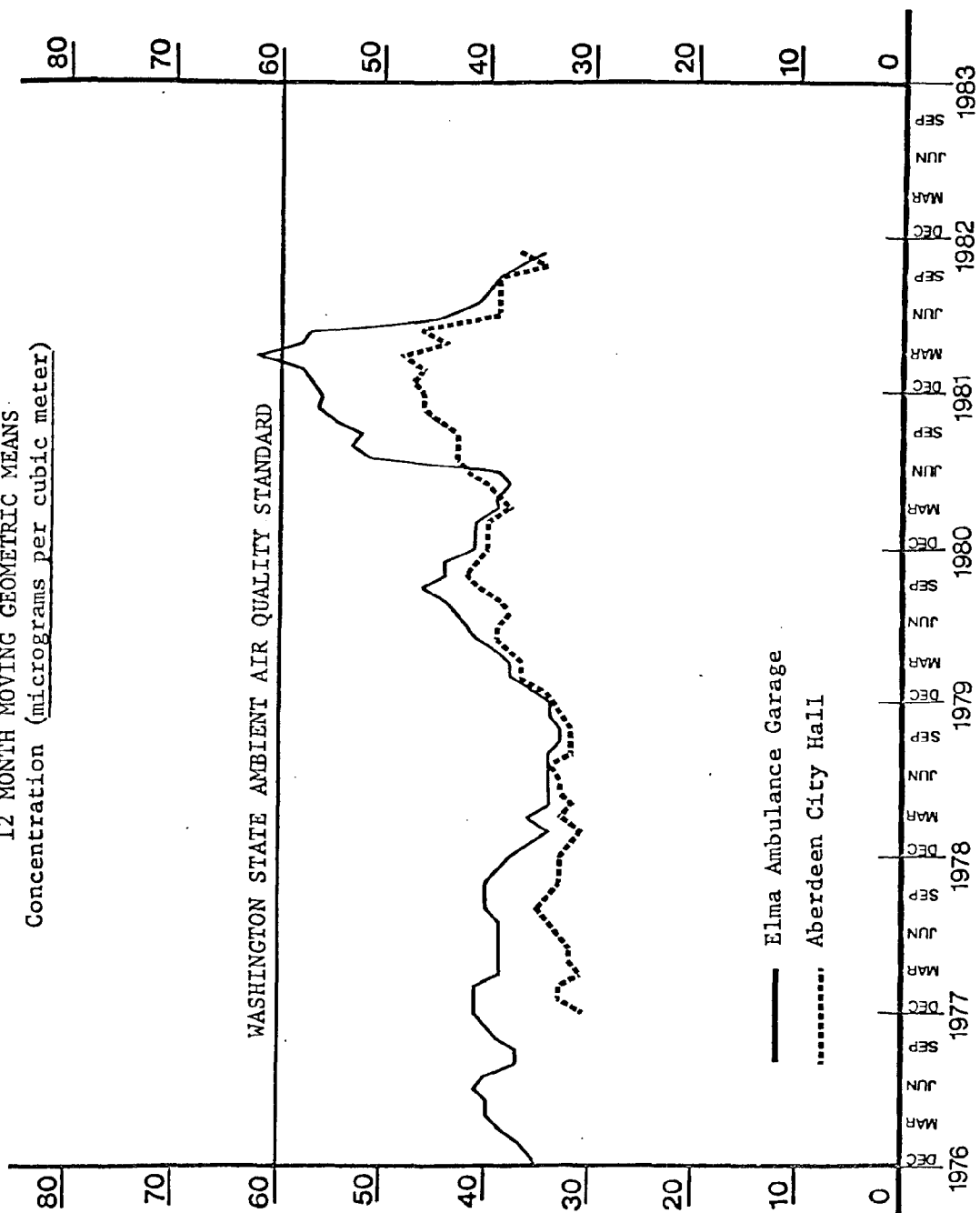
Anticipated Impact on Air Quality:

While encouraging future growth to occur in or near existing populated areas will tend to concentrate air pollutants more, overall air pollution will be less, since the proposal attempts to reduce sprawl. This should lessen auto transport by increasing mass transit potentials and by reducing the distance required for each trip. The focusing of development in the Elma area could increase particulate matter in the air in Elma.

Odor:

A by-product of many farm operations, particularly farms with livestock, is odor. To mitigate the impact of this problem, the proposal attempts to buffer or separate from farming areas those uses which can be negatively impacted by farm odors. For instance, residential developments are discouraged from locating near the designated farming areas. The proposal also contains measures which will tend to lessen the impacts and odor from forest products processing plants.

FIGURE 1
 GRAYS HARBOR COUNTY
 HV-SUSPENDED PARTICULATES
 12 MONTH MOVING GEOMETRIC MEANS
 Concentration (micrograms per cubic meter)



2.3 Potential Mitigation of Adverse Impacts on Air Quality

The potential of increased air particulate matter can be substantially reduced by improving developmental construction practices and incorporating and maintaining buffers within new development. These factors should be considered in the various permitting processes relating to development.

Improved buffering of agricultural areas from residential areas as envisioned in this proposal will assist in mitigating problems associated with agricultural odors.

3.1 Existing Condition of Water Resources

Surface Water Movement

The Chehalis River is the dominating water feature in the study area. It drains an area of about 2,012 square miles. Other important water features in East County are the Black River, Wildcat and Cloquallam Creeks, Mox-Chehalis, Satsop, and Wynoochee River subbasins, all of which flow into the Chehalis River. There is also the North River which flows into Willapa Bay. In addition, there is Wynoochee Lake, created by a dam located approximately 25 miles up the Wynoochee River. The dam helps moderate the high and low flows that occur on the river insuring an adequate source of water for farm irrigation and for the City of Aberdeen's Industrial Water Supply Intake located approximately eight miles up river from the confluence of the Wynoochee at the Chehalis.

Runoff/Absorption

Little of the study area is urbanized, consequently runoff and absorption occur naturally over a large area. Map 5 displays the estimated mean runoff for the area. However, as mentioned in the section on erosion, logging and farming practices on lands in the area may tend to upset this natural process, causing increased sedimentation, contributing to an increase in rate and volume of water flow in streams and creeks, decreasing slope stability, and interfering with the maintenance of stream habitats and water quality.

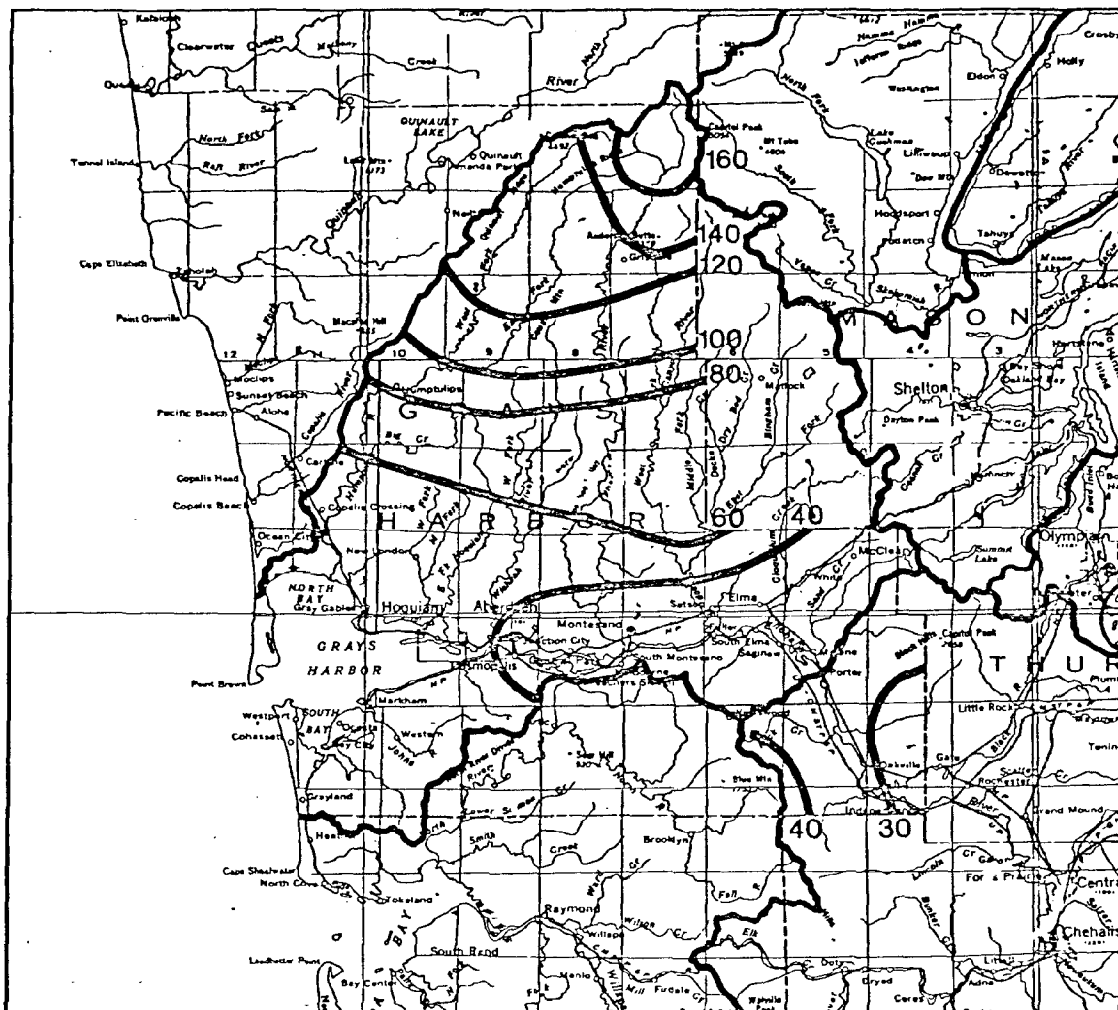
When urbanization and other development occurs, there are often problems with excessive runoff due to increased land cover and reductions in vegetation resulting in reduced absorption and drainage systems which are inadequate to accommodate increases in water runoff.

Flooding

For the most part, the urban centers in East County lie outside of the 100 year floodplain and so rarely experience flooding from the Chehalis River.

Flooding in these areas generally occurs from inadequate drainage and increased stormwater runoff. It should be noted, however, that part of the drainage problem results when the streams draining the towns are blocked by high water from the Chehalis River.

MAP 5



"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."

**INCHES MEAN
ANNUAL RUNOFF**

The major floodplain areas in East County are in the Wynoochee, Satsop, North River, and Chehalis River Valleys and their smaller tributary streams. These are also where the most fertile agricultural soils are located and the primary land use in the floodplain is agricultural in nature and is outside the specific areas addressed by these policies.

Surface Water

Other than the previously mentioned Wynoochee Lake, numerous small lakes can be found in East County. Some are fed by streams while others are simply low spots and are created by the high water table. The generally high water tables found in the floodplains and other areas, pose numerous difficulties for intensive residential use.

Surface Water Quality

Water quality in the rivers, streams, and lakes in the study area is generally high. However, water quality does suffer in the rivers during times of low flows and high ambient temperatures, according to the 1974 Grays Harbor Water Quality Management Plan. These conditions favor decreases in the levels of dissolved oxygen. The Water Quality Management Plan also notes that coliform levels in the Chehalis River are a bit high, and are probably due to a variety of factors which include:

- (1) Urban runoff (as can be witnessed by high coliform counts during high runoff periods);
- (2) Sanitary landfills leachates;
- (3) Municipal wastewater treatment discharges (including plant failures);
- (4) Leachate from industrial wood waste sites;
- (5) Septic tank effluents (depending upon location in respect to a nearby stream);
- (6) Natural runoffs (grass lands, forest, etc.); and
- (7) Agricultural runoff.

Groundwater Quantity and Quality

Groundwater occurs where surface water and precipitation percolate into the ground and are stored in porous earth and geological structures. Not all types of geologic deposits are as permeable as others and subsequently they vary as sources of groundwater. Groundwater supplies in the study areas are obtained principally from river and terrace geological deposits. The river deposits are located in the bottoms of the major river valley. Such as the Chehalis and Satsop. The terrace deposits are found on the low benches along the Chehalis River Valley, along the lower reaches of Cloquallum Creek east of Elma, and north and west of the Town of McCleary. Almost all the wells penetrating those deposits are located in the lowlands along the river or on the terraces.

Wells in the river deposits yield from 200 to 3,000 gpm (gallons per minute) in the Chehalis River Valley and up to 200 gpm in the tributary valleys. The terrace deposits typically yield moderate supplies of 40-100 gpm. In

contrast to these yields the Tertiary bedrock deposits which make up the hills beyond the river valleys and terraces have proved unproductive as a source of groundwater.³

In his preliminary investigation for Washington State, Paul A. Eddy found large quantities of groundwater available for future use in the Chehalis River Valley.⁴ There also appears to be groundwater available in the terrace deposits, although at a much lower level than the Chehalis River Valley. Very little groundwater is available from the Tertiary bedrock deposits.

The lack of available groundwater in the Tertiary bedrock underlying the hills and uplands of east Grays Harbor is a major limitation to development. Residents of these areas have a difficult time maintaining an adequate supply of potable water. The Department of Ecology Water Resources staff recommends that because of the difficulty of obtaining potable water in the Tertiary volcanic and sedimentary rock formations the zoning minimum lot size in those areas should be at least five acres.⁵

Groundwater supplies in east Grays Harbor County are of good quality. The Chehalis River Valley has two distinct aquifers. One aquifer is at a depth of 100 feet and up and produces adequate amounts though it is high in iron and needs treatment prior to human consumption. The lower aquifer produces both good quantity and high quality water without a significant drawdown. Water from the tributary valleys and terrace deposits are also of good quality. There has been some localized groundwater contamination in lower yielding terrace deposits and tributary valleys. These problems are due, for the most part, to septic tank leachate and leachate from wood waste fills. As noted in the soils discussion several problem areas have been identified. They include septic tank leachate in the Alder Lake and Garden Hill areas and a potential problem in the area around Sky Acres.

Most groundwater in Eastern Grays Harbor County flows toward and discharges into the Chehalis River.

Public Water Supplies

All of the east county cities obtain their water supplies from groundwater held by river and terrace geological deposits. Montesano, Elma, and Oakville's wells tap into the Chehalis River Valley deposits. McCleary obtains its water supply from terrace deposits.

The City of Montesano water system has a quality water supply with enough water resources to supply future growth both within the City and its urban services area.

The City of Elma water system has a high quality water supply with adequate supply for future expansion. Before water service can be expanded significantly a new storage tank must be constructed.

The City of McCleary water supply has a flow adequate for its present and future needs through the 1990's. The wells contain an iron content of 0.3 ppm which is the upper limit for drinking water. The distribution system requires extensive repairs before much expansion can occur.

The City of Oakville's water system relies on two wells, one of which has

been closed because of contamination. The other, much older well is adequate but may have a limited future because nearby development may cause it to be contaminated.

Privately owned water systems serve Malone, portions of Porter, White Star, several mobile home parks, a portion of Sky Acres, and the Meadowood Subdivision. These systems are adequate with supplies that meet the state water quality standards. An exception is the Meadowood Subdivision water system east of Elma. The state currently will not permit new connections to the system because the water has high iron and magnesium levels. The systems owners are currently evaluating the possibility of obtaining their water supply from wells located on a nearby property.

The rest of the residents of eastern Grays Harbor County obtain their water from individual wells, small systems serving a couple of dwellings, and in certain areas where groundwater supplies are inadequate, springs and surface water. As was noted in the discussion of groundwater, localized cases of well contamination occur but are infrequent.

3.2 Anticipated Impact of the Proposal on Water Resources

Development can have a significant impact on water resources. In areas undergoing urban development, natural drainages are covered over or diverted, and large areas of impermeable surface increase the rate and volume of runoff. This can lead to increased sedimentation, greater fluctuation of water flow, and higher peak flow amounts in creeks or drainage courses which might receive the runoff. In rural areas, increasing densities can lead to groundwater, well water, and surface water contamination. The Rural Lands Proposals contain measures designed to lessen the potential of these impacts occurring.

Anticipated Impact on Surface Water Movement

The rural lands policies require the retention of existing streams and drainage channels to minimize changes in surface water movement. This policy can be applied through the SEPA and land division process, although to be most successful the county subdivision ordinance should be amended to incorporate this policy.

Anticipated Impact on Runoff/Absorption

The development facilitated by this proposal will result in increased removal of natural vegetation, increases in impermeable surfaces, decreased levels of absorption, and increased levels of stormwater runoff. Depending on where and how rapid growth occurs, the annual stormwater runoff due to increased development by 1990 is estimated to range from six million gallons given a low projection and a widely scattered land use pattern to 940 million gallons if the R-2 and RR zones were near saturation. The high estimate is highly unlikely. A more probable range, given the present population projections for

unincorporated east Grays Harbor County, would anticipate annual stormwater runoff from new development of between 10 and 16 million gallons. These increases in runoff are in addition to the naturally occurring stormwater runoff and the runoff from existing developments.

Stormwater runoff is becoming an increasingly serious problem in Grays Harbor County. Increases in stormwater runoff caused by development have contributed to increased flooding of downstream property and erosion. As development continues the increases in stormwater runoff are expected to intensify those impacts.

The rural lands policies call for measures to prevent increases in peak stormwater runoff and to insure that stormwater runoff is contained within an adequate, cost-effective drainage system. To most effectively implement this policy, it should be included in the county platting ordinance.

Anticipated Impact on Flooding

The proposal recognizes the physical constraints of the floodplain, and nearly all of the 100 year floodplain would be limited to very low density development, agriculture or similar uses. Not only does this assure that intense development does not occur in a flood hazard area, it also helps to preserve the agricultural land base and the rural character of the county.

Increased stormwater runoff could contribute to increased flooding drainage unless effectively mitigated.

Anticipated Impact on Surface Water Quality

The proposal will have an impact on surface water quality through increased stormwater runoff, increased sewerage treatment plants discharges, and through the encouragement of continued silvacultural production. The impact of increased sewage discharges is anticipated to be minor, and the plants should be able to operate with limits imposed by water quality standards in the future.

Anticipated Impact on Groundwater Quality and Public Water Supplies

The impact of the proposal on groundwater water quality is discussed in section 1.2, Anticipated Impact on Soil Suitability for On-site Waste Disposal. Possible mitigating measures were discussed in section 1.2, Potential Mitigation Measures for Adverse Impacts on the Earth.

Increased development within the designated areas will increase demand for potable water. Most of these demands will be satisfied by groundwater resources. The proposal encourages intense development in areas served by existing water and sewer systems. Few new systems should be needed although existing systems will need upgrading to accommodate new development. Lower density development is encouraged in areas with sufficient groundwater resources to accommodate that level of use without diminishing water availability. Areas with little groundwater resources are planned for a density of one dwelling unit per five acres.

Overall the available information indicates that this proposal should not result in withdrawals of water beyond the point where it can be recharged each year. However, in the hill areas underlain by Tertiary bedrock, withdrawals may be approaching or may have exceeded the amount of water which can be withdrawn without depleting groundwater resources. Indeed in some areas of Tertiary bedrock groundwater is not being recharged because the rock layers are impermeable. These areas will probably experience declining well yields and some areas may require water from sources outside the areas. Declining well yields has been reported in the Stamper Road area northeast of Elma, which is underlain by Tertiary bedrock.

Potential Mitigation of Adverse Impacts on Water Resources

The proposal includes specific policies intended to reduce encroachment of development on natural drainage patterns and to lessen peak stormwater runoff. In an overall sense the proposal will divert development from major drainage ways and lessen potential runoff. However, successful implementation of the policies to specific sites will require changes in other ordinances, notably the Grays Harbor County Subdivision Ordinance, which are not specifically addressed in this proposal.

There are numerous methods for handling increased runoff from buildup areas including terracing, vegetation belts, settling basins, sediment traps, etc., which could be used to manage runoff. Protecting natural drainages in urbanizing areas is not only desirable but also possible. Drainage plans are currently prepared on a project basis in the absence of a county drainage plan or ordinance. Drainage provisions implementing these policies should be added to the county platting ordinances.

The proposals also contain policies designed to provide for the orderly, cost effective expansion of those municipal water and sewer systems planned for expansion. Again provisions implementing these policies should be included in the county platting ordinances.

The water quality impacts from silvacultural operations are mitigated by the Washington State Forest Practices Act and implementing regulations.

4.1 Existing Flora Resources

In pristine times the region was covered with dense virgin forest. Now forest areas are generally limited to higher sloped areas in the northern part of the region. In these forested areas a wide variety of species may be found with conifers dominant (Douglas Fir, Western Hemlock, Western Red Cedar, and Sitka Spruce). In lowland areas hardwoods, especially red alder, are common.

The vegetation of the wide valley floors reflects past land use history. It is a mosaic of farm land, brush area, and different forest types of all ages. These lowlands were originally covered with conifers except for a few open meadows. On the alluvial flood plain vegetation varies with degree of drainage. On poorly drained soils grow Western Red Cedar, or mixed stands of Western Red Cedar, Hemlock, Douglas Fir, Red Alder, and Big Leaf Maple. Near Riparian habitats Black Cottonwood, Oregon Ash, Big Leaf Maple, and Red Alder are common. The bottom lands are used for moderate production of grasses for dairy cattle or for cash crops. Land on the river terraces, benches, or moderately rolling uplands is used partially for production of forage for

livestock. Secession in riparian areas is characterized by pioneering species of willow and alder to be mixed later with Oregon Ash, Cottonwood and Big Leaf Maple. On farmlands, abandoned for various reasons, weed grass stages are followed with a mixture of willows, evergreens, blackberries, alders, etc.

Interspersed with these general vegetative patterns are occasional limited areas of freshwater marshes on poorly drained soils or areas where drainage has been blocked.

No unique species have been identified in the rural lands areas.

Detailed inventories of the vegetation of the Chehalis Valley may be found in the environmental reports prepared for the nuclear power plants at Satsop.

4.2 Anticipated Impact of the Proposal on Flora Resources

To a certain extent, many adverse impacts on flora are unavoidable because development will occur somewhere. The proposal seeks to manage this by directing development to particular areas. While this intensifies the loss of flora in these areas, it will tend to conserve it in other areas. One of the potential implications of the proposal is to reduce residential encroachment into areas being managed for timber production. On one hand this conserves areas for timber production, but silvacultural practices also tend to reduce the diversity of the native fauna. The proposed is not expected to create any new barriers or corridors to flora.

The proposal designates for development an estimated 300 acres which are currently used for the procedures of farm crops or pasture. Approximately 60 acres of land used for the current production of Christmas trees is planned to be converted to other uses.

4.3 Potential Mitigation of Adverse Impacts on Flora Resources

Improved subdivision controls and other measures would assist in conserving flora resources in areas which are designated for development. Opportunities for this mitigation measure is particularly strong in the areas designated for "rural" types of development.

The Rural Lands proposals contain policies to protect "the habitats of threatened or endangered species and locally significant natural areas." This policy could be administered through the county subdivision ordinance and the State Environmental Policy Act and would mitigate some of the adverse impacts of this proposal.

5.1 Existing Fauna Resources

Fauna in the area is generally characteristic of northwest coastal regions of moderate settlement in agricultural and forest areas.

The varied topography and vegetative composition of the planning area, and adjacent areas, is largely responsible for wildlife composition, diversity, density, and structure.

In the study area various species of big game may be found including Black-Tailed deer, Roosevelt Elk, and Black Bear. The Black-tailed deer is by

far the most abundant of these species. Other mammal species which may be found include Snowshoe hares, the Red fox, beaver, muskrat, mink, racoon, bobcat, Striped skunk, etc. The Blue grouse and Ruffed grouse are the most abundant upland game birds with occurrence of Mountain quail, pheasant, and Mourning dove. The general area is also noted for wintering waterfowl in abundant numbers, with a portion of the population nesting in wetter habitats. Scattered grain, flooded fields, and shelter from coastal storms are major attractions for waterfowl. The only unique animal species identified within the rural lands is the Roosevelt elk. This elk is found in the far north portion of the study area and is not expected to be impacted by the proposal. There are several endangered or threatened species of birds; the Bald and Golden eagle and the Peregrine falcon have been identified in East Grays Harbor County.

Of particular importance are aquatic animals which pass through the study area's rivers and streams. The Chehalis River and its tributaries are a major habitat for migratory fish: including Chum salmon, Coho salmon, Chinook salmon, the Steelhead trout, and Cutthroat trout.

The proposal is not expected to create a new barrier or corridor for fauna species.

5.2 Anticipated Impact of Proposal on Fauna Resources

Little change in the habitats of the agricultural lands is expected since lands in those uses in the current zoning are to remain so in the proposed zoning. Habitat disturbances and/or removal, with the resultant loss in wildlife are also targeted for urban or high density residential growth.

The proposal will help to preserve habitats by having large lot sizes totaling tens of thousands of acres and by assuring low density settlement over large portions of the county. The aspects of the proposal that seek to protect drainage courses and reduce peak runoff will also tend to conserve aquatic resources.

5.3 Potential Mitigation of Adverse Impacts on Flora Resources

As in the case of flora resources, the focusing of potential development into a few areas will create adverse impacts on the fauna populations located in these areas. This, however, is mitigated by two factors. First, such areas were designated for development in part because they are already significantly affected and are less likely to have substantial natural fauna resources. Second, such policies will assist in conserving lesser developed areas where such populations are generally more significant. In addition the proposal outlines policies protecting the habitat of endangered or threatened species that could lessen the impacts of this proposal.

6.1 Existing Noise Conditions

There is very little constant noise pollution occurring in unincorporated East County. Most sources of noise are industrial such as shake and lumber mills. These are scattered throughout the area. Localized noise pollution has

been caused by scattered industrial activities. Noise created by farming activities is diffused throughout the area and generally is not a problem. Noise from logging activities in general are concentrated, but usually not a problem. There have not been any studies done on the effect this noise may have upon flora and fauna of the area. The Satsop Nuclear Construction Project also contributes to noise pollution in the area.

Traffic is a major source of noise within both the incorporated and unincorporated areas. Except for McCleary, other noise pollution in the incorporated areas is minimal. The door and veneer plant in McCleary is a source of noise pollution, though its level and effect has not been quantified.

6.2 Anticipated Impact of the Proposal on Noise Conditions

While the proposal would significantly reduce any potential degradation of the existing situation, the proposal would permit new wood products mills in rural areas. However, these mills would be reviewed to insure capability with adjacent uses and to insure that nearby residential uses are adequately buffered.

6.3 Potential Mitigation of Adversed Impacts on Noise Conditions

Most of the potential for increased noise would be subject to conditional use permits under the proposal. As such mitigation measures associated with the location or design of such uses can be required upon approval. Also improvements in the existing county subdivision ordinance could provide additional mitigation of the potential adverse impacts.

7.1 Existing Light and Glare Conditions

With the exception of the Satsop Construction project and associated facilities, the area generally lacks any significant problems with light and glare. Localized glare problems exist near commercial and industrial areas which utilize bright exterior lighting.

7.2 Anticipated Impact of the Proposal on Light and Glare Conditions

The proposal would assist in assuring that most of the area subject to its policies would continue to be free from this problem. However, in so doing, it tends to increase development in some areas. Such an increase could increase light and glare in these areas. However criteria have been incorporated into the zones to reduce light and glare impacts near commercial and industrial uses. Also, as in the case of noise, the proposal will potentially allow new mills in rural areas but only after review to ensure compatibility.

7.3 Potential Mitigation of Adverse Impacts on Light and Glare Conditions

Potential adverse impacts of more light and glare near new mills or in higher density areas can be adequately controlled by means of either existing regulations or by conditional use permits under the proposal. Again, an improved subdivision ordinance would provide greater assurance that such problems can be avoided.

8.1 Existing Land Uses

The dominant land use within east Grays Harbor County is forestry. Forest lands occupy the slopes and hills adjacent to the river valleys.

The fertile river bottoms in East County are primarily used for farming. The Chehalis River Valley east of Montesano and south of Oakville to the Thurston County line is heavily farmed. Extensive farming also occurs in the Wynoochee and Satsop Valleys and to a lesser extent in the Mox-Chehalis and North River Valleys. In addition to the valley floors, farming also occurs on the adjacent benches, some hills, and certain terraces.

Residential land uses are primarily located in the cities, towns, and rural service centers, and along roads between Montesano and McCleary. The highest concentrations of housing and population are found in Montesano, Elma, McCleary, and Oakville. Residential uses are also centered around the rural settlements of Brady, Satsop, South Elma, Porter, Malone, and White Star. In recent years residential uses have tended to fan out into the more rural areas along the roads.

Commercial land uses are primarily located in the cities and towns and to a lesser degree in the rural settlements. Commercial uses are also locating south and west of Montesano, west of Elma along Shouweiler Road, and west of McCleary.

Like commercial uses, industrial uses tend to locate in or near cities and towns. In addition to those industrial uses located in incorporated areas, industrial uses are found southeast of Elma and at White Star (often called Whites). Of recent note, too, is the Satsop Nuclear Construction Project on Fuller Hill and a number gravel extraction operations that have developed within the main farming valleys, some having displaced farms. Also, shake and shingle mills are found throughout East County.

Map 6 displays the land use pattern in eastern Grays Harbor County.

Tables 2 and 3 identify the land use conversions that have occurred in the last several years.

In several areas land use changes have accelerated in recent years. These changes have increased land use conflicts and brought into question the existing development regulation applied to the areas. These areas include the land between Oaks Ridge Golf Course and Elma, the corridor along the old highway between Elma and McCleary, and the prairie north of McCleary. These areas have been characterized by several trends. Rezones from the county's 1969 agricultural zone and the general development zone to General Residential (R-2) have become common in areas without adequate public facilities. There has been increased development in areas where access is provided by substandard public and private roads. There has been an increase in intense land uses in rural areas.

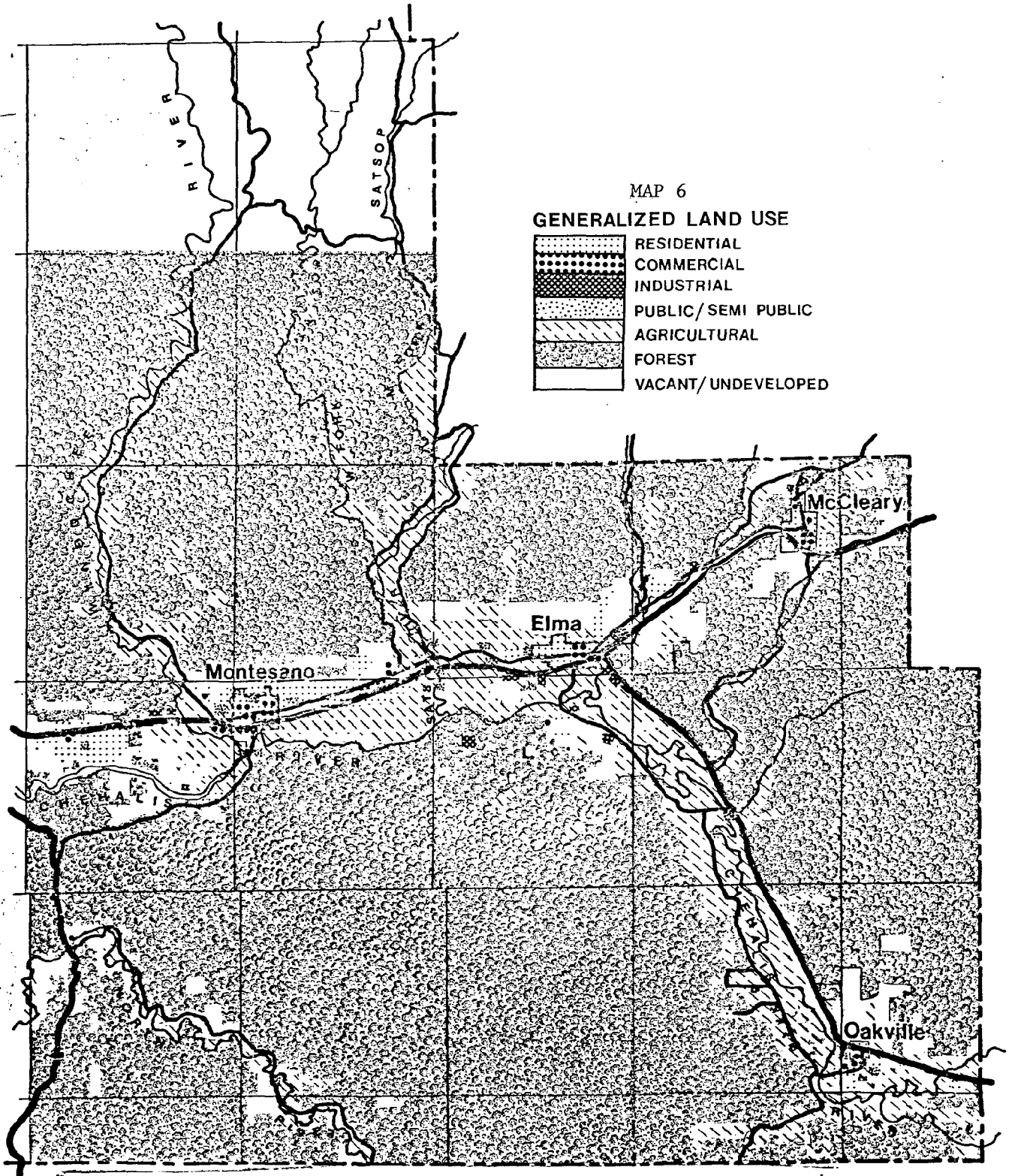
8.2 Anticipated Impact of the Proposal on Land Use

The proposal will generally provide that future development be accommodated within the general context of the existing patterns. This would facilitate

EASTERN GRAYS HARBOR COUNTY



0 5
MILES



MAP 6
GENERALIZED LAND USE

| | |
|--|--------------------|
| | RESIDENTIAL |
| | COMMERCIAL |
| | INDUSTRIAL |
| | PUBLIC/SEMI PUBLIC |
| | AGRICULTURAL |
| | FOREST |
| | VACANT/UNDEVELOPED |

"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."

TABLE 2
TOTAL ACRES OF LAND USE CHANGES-ORIGINAL AND EXPANDED INVENTORY AREAS
EASTERN GRAYS HARBOR COUNTY
1977-1981

| New Use | Original Use and Acres of Change | | | | | | | Total Change | % of Total Change |
|------------------------|----------------------------------|--------------|------------|------------|------------------------|----------|---------------------|--------------|-------------------|
| | Residential | Agricultural | Industrial | Commercial | Public/ Semi-Public | Vacant | Forest | | |
| Residential | .56 | 128.25 | .70 | 1.67 | .23 | 172.24 | 207.9 | 511.55 | 42.5 |
| Low Density | | (116.25) | (.70) | (1.67) | (.23) | (147.85) | (201.65) | (468.35) | (38.9) |
| Moderate | (.56) | (12.00) | | | | (21.12) | (6.25) | (39.93) | (3.3) |
| High | | | | | | (3.27) | | (3.27) | (0.3) |
| Agricultural | | | | | | 4.30 | 94.00 | 98.30 | 8.2 |
| Industrial Total | 3.76 | 177.32 | | | | 16.80 | 172.40 | 370.28 | 30.8 |
| Gravel | | (153.52) | | | | (13.80) | (162.60) | (329.92) | (27.4) |
| Commercial | 6.2 | 2.00 | | | .50 | 11.97 | 1.50 | 22.17 | 1.8 |
| Public/ Semi-Public | 10.70 | 5.00 | | .61 | | 12.08 | 100.00 ¹ | 128.39 | 10.7 |
| Vacant | 28.64 | 38.15 | | 1.71 | .16 | 2.50 | | 71.16 | 5.9 |
| Forest | .50 | 1.00 | | | | | | 1.50 | 0.1 |
| TOTAL | 50.36 | 351.72 | .70 | 3.99 | .89 | 219.89 | 575.80 | 1,203.35 | 100.0% |
| Percent | 4.2% | 29.2% | 0.1% | 0.3% | 0.1% | 18.3% | 47.8% | 100% | |

Percentages might not total 100% due to rounding.

¹Represents the west laydown area for the Satsop Construction Project; one change of 2 acres for intensification of use is excluded.

TABLE 3
TOTAL NUMBER OF LAND USE CHANGES-ORIGINAL AND EXPANDED INVENTORY AREAS
EASTERN GRAYS HARBOR COUNTY
1977-1981

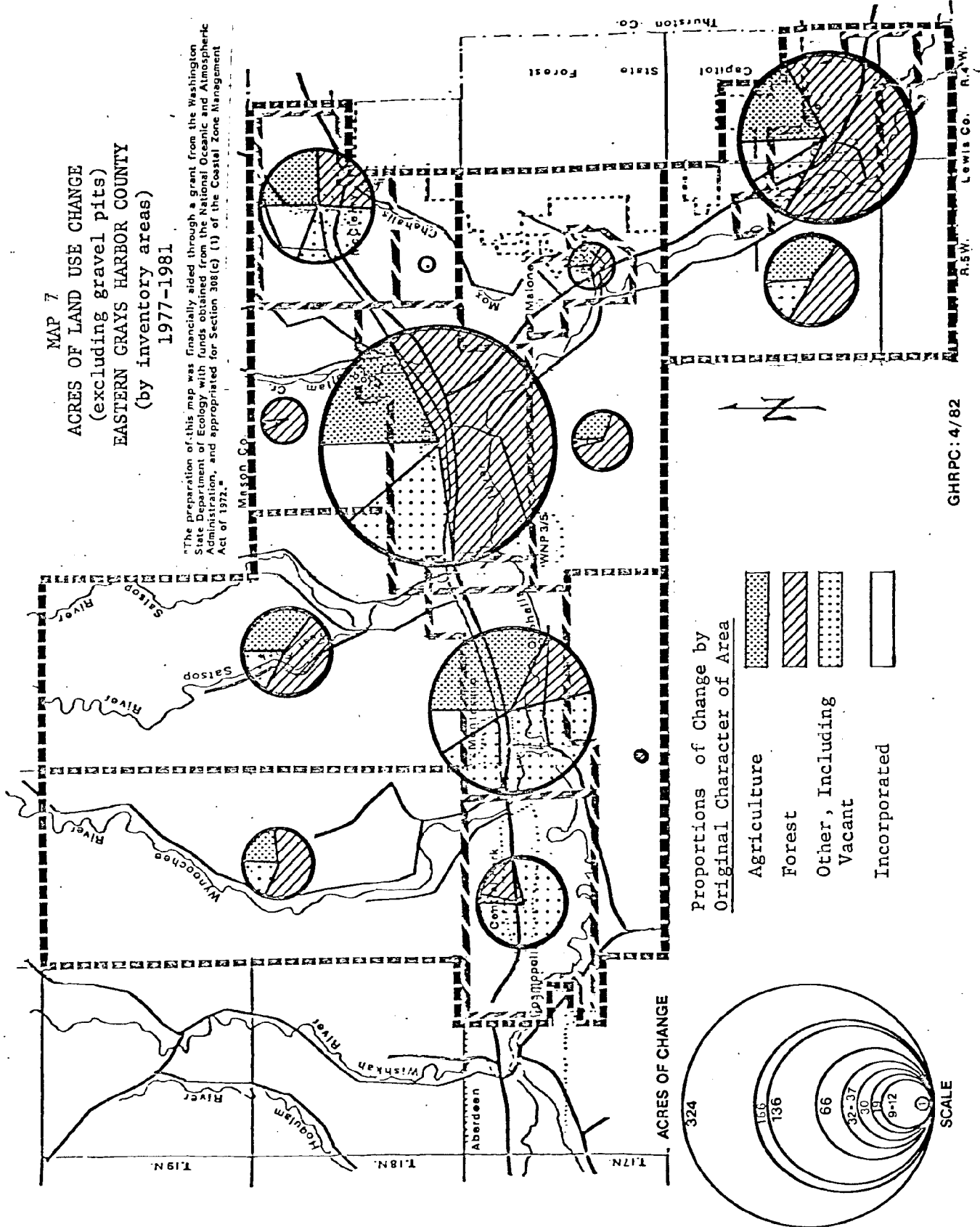
| New Use | Original Use and Number of Changes | | | | | | | Total Change | % of Total Change |
|------------------------|------------------------------------|--------------|------------|------------|------------------------|--------|--------|--------------|-------------------|
| | Residential | Agricultural | Industrial | Commercial | Public/ Semi-Public | Vacant | Forest | | |
| Residential | 4 | 213 | 2 | 6 | 1 | 444 | 351 | 1,021 | 83.0 |
| Low Density | (1) | (207) | (2) | (6) | (1) | (400) | (349) | (966) | (78.5) |
| Moderate | (3) | (6) | | | | (39) | (2) | (50) | (4.1) |
| High | | | | | | (5) | | (5) | (0.4) |
| Agricultural | | | | | | 1 | 2 | 3 | 0.2 |
| Industrial Total | 3 | 9 | | | | 5 | 12 | 29 | 2.4 |
| Gravel | | (4) | | | | (1) | (6) | (11) | (0.9) |
| Commercial | 24 | 4 | | 4 | 1 | 25 | 3 | 61 | 5.0 |
| Public/ Semi-Public | | 6 | | 4 | | 7 | 2 | 19 | 1.5 |
| Vacant | 86 | 2 | | 5 | 1 | | | 94 | 7.6 |
| Forest | 1 | 2 | | | | | | 3 | 0.2 |
| TOTAL | 118 | 236 | 2 | 19 | 3 | 482 | 370 | 1,230 | 100.0% |
| Percent | 9.6% | 19.2% | 0.2% | 1.5% | 0.2% | 39.2% | 30.1% | 100% | |

Percentages might not total 100% due to rounding.

One change of two acres for intensification of use is excluded.

MAP 7
ACRES OF LAND USE CHANGE
(excluding gravel pits)
EASTERN GRAYS HARBOR COUNTY
(by inventory areas)
1977-1981

"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."



GHRPC: 4/82

R.S.W. Lewis Co. R.W.

the economical provision of public services and facilities to both existing and future development. The proposal has policies designed to address the land use problems that have occurred in recent years. Adoption of the policies and proposed zones should help lessen the problem resulting from the areas land use trends. Also, the quality and character of existing uses would be protected by policies relating to avoiding conflicts between uses. The potential land use conflicts between the county, cities, and special districts will be reduced by the coordinating mechanism contained in the Rural Land policies.

8.3 Potential Mitigation of Adverse Impacts on Land Use Patterns

As in the case of other aspects of the environment, the cost of the benefit of the proposals conservation of existing values is an increased density of uses in some areas. This cost is intended to be mitigated by policies which seek to avoid land use conflicts in these areas. While many of the policies can be effectively implemented with the proposed zoning regulations, an improved subdivision ordinance would provide further mitigation.

9.1 Existing Use of Natural Resources

The natural resources in east Grays Harbor County consist primarily of:

- (a) Space for development (residential, commercial, and industrial);
- (b) Agricultural soils and products;
- (c) Forestry soils and forest products;
- (d) Surface and groundwater resources;
- (e) Fish production in area rivers, streams, and lakes;
- (f) Game production;
- (g) Gravel and rock resources;
- (h) Hydropower resources; and
- (i) Scenic resources.

These natural resources are used to a varying extent.

9.2 Anticipated Impact of the Proposal on the Use of Natural Resources

The proposal will help conserve the natural resources of the Rural Lands and should allow for their continued use and productivity.

The proposal is not expected to increase the rate of use of natural resource.

The population accommodated by the proposal is expected to use the following nonrenewable resources by 1990: land for residential uses; commercial and industrial land; scenic resources; conversion of forestry land to other uses; conversion of 2,200 acres of prime agricultural land to other uses; nonrenewable construction materials; nonrenewable energy resources; and nonrenewable material in goods.

The following renewable resources would be consumed: construction materials; groundwater resources; soil waste absorption capacity; renewable energy resources; food; and renewable resources in other goods.

9.3 Potential Mitigation of Adverse Impacts on the Use of Natural Resources

Policies and districts which provide greater protection to commercial forestry lands could be adopted. Such policies and districts have been considered in the past and at the time it was not feasible to adopt them.

10.1 Risk of Explosion or Hazardous Emissions

The major risks of explosion or hazardous emissions in east Grays Harbor County result from the transportation by truck and rail of industrial chemicals to and wastes from the Aberdeen-Hoquiam industrial area, the transportation by truck of fuel, the transportation by truck of agricultural and silvacultural chemicals, and the transportation by rail of nuclear weapon components destined for naval bases in Kitsap County.

Additional risk also results from the storage of fuel, agricultural, and silvacultural chemicals. The application of agricultural and silvacultural chemicals also presents a risk of hazardous emissions.

10.2 Anticipated Impact of the Proposal on the Risk of Explosion or Hazardous Emissions

The proposal will permit increased residential development (at a density of one acre) along the rail corridor serving the Kitsap County naval bases. The portions of the corridor where the increased density will be permitted are the segment between Elma and White Star and the segment north of McCleary. Increased residential development will also be permitted at South Elma which is along one of the railroad mainlines serving the Aberdeen-Hoquiam industrial area. The proposal will not otherwise increase the risk of explosive and hazardous emissions from transportation.

The locational criteria for industrial uses within the proposal will lessen the potential for damage by explosion or hazardous emissions by separating other uses from areas where such materials are stored and used. Similarly, the policy of separating residential areas from agriculture and forestry areas will lessen the potential for hazardous emissions from the application of agricultural and silvacultural chemicals.

10.3 Potential Mitigation of Adverse Impacts on the Risk of Explosion or Hazardous Emissions

The designations of the areas along the various rail corridors could be reevaluated, but the staff does not believe that such changes would provide increased protection.

B. ELEMENTS OF THE HUMAN ENVIRONMENT

1.1 Existing Population

The population of eastern Grays Harbor increased by nearly 27% between 1970 and 1980, a substantially higher growth rate than the county as a whole (11.4%). The Elma area grew at a rate of 34.1% over the decade, or 3% per year.

The unincorporated area of East County grew much faster - 36.5 percent than the cities - 16.5 percent. This rapid growth and related land conversion led to the need to develop the Rural Lands Recommendations to accommodate this growth.

1.2 Anticipated Impact of the Proposal on Population

While the proposal is not expected to affect overall population levels, it will substantially affect the location of that population. The proposal may, depending in part on the annexation policies of the affected cities, increase the rate of growth in cities and reduce growth rates in unincorporated areas.

The Rural Lands Proposals would zone enough land for residential uses to accommodate the population projected for unincorporated east Grays Harbor County. Just the land zoned Rural Residential (one of the proposed area acre minimum lot size zones) and General Residential (R-2) would accommodate over twice unincorporated east Grays Harbor County's total 1980 population assuming that over 1/3 of the land area in these two zones would not be available for development.

2.1 Existing Housing

As in the case of population, the number of new housing units in the affected area is increasing. A peak of new housing construction occurred in 1978 when permits were given for 179 units in the unincorporated area of East County. In 1981, building permits were issued for 155 units. Over the last 6 years 946 new units were issued building permits in the unincorporated area of East County while only 501 permits were authorized in the East County cities. While this was a significant number of units in both the urban area and the beach areas of the county more building permits were taken out.

Single family dwellings and mobile homes make up the bulk of the building permits issued in unincorporated East Grays Harbor County. Between 1975 and 1981, inclusive, 387 permits were issued for single family dwellings and 431 permits were issued for mobile homes. During the same period, permits were issued for 128 units of multi-family housing. Figure 2 shows the number of permits issued for each structure by year in unincorporated east county. Single family building permits led mobile home building permits for three years and mobile homes led single-family permits for four. Note that a third of the permits for multi-family units during the seven year period were issued in one year--1977.

Following the state and national trends, housing costs increased significantly in Grays Harbor County in recent years. Between 1970 and 1980 the medium value of owner-occupied houses increased 215 percent. While a high rate of increase, this increase was lower than the increase in housing values for the state as a whole.

Within Grays Harbor County the highest housing values are found in the Ocean Beaches, particularly Ocean Shores and North Beach. Table 6 compares the value of housing for the Cities in Grays Harbor County. During the 1970's, the housing values in the east county cities tended to grow the fastest, although only Oakville's average value grew at a faster rate than Washington State's. Table 7 compares the median (average) values for the east county census divisions. The census divisions generally include both incorporated

TABLE 4
POPULATION OF EASTERN GRAYS HARBOR COUNTY
1970 - 1980

| | <u>1970</u> | <u>1980</u> | <u>Total Percentage Increase 1970-1980</u> |
|---|-------------|-------------|--|
| Montesano | 2,847 | 3,247 | 14.0 |
| Unincorporate Montesano Area (Wynoochee Division) | 2,370 | 3,006 | 26.8 |
| Elma | 2,227 | 2,720 | 22.1 |
| Unincorporated Elma Area (Elma Division) | 1,795 | 2,708 | 50.9 |
| Malone Porter Area (Unincorporated) (Malone-Porter Division) | 841 | 1,095 | 30.2 |
| McCleary | 1,265 | 1,419 | 12.2 |
| Unincorporated McCleary Area (McCleary Division) | 859 | 1,399 | 62.9 |
| Oakville | 460 | 537 | 16.7 |
| Unincorporated Oakville Area (Oakville Division) | 674 | 808 | 20.0 |
| Unincorporated North River Area (North River Division) | 458 | 532 | 16.2 |
| Incorporated East County | 6,799 | 7,923 | 16.5 |
| Unincorporated East County | 6,997 | 9,548 | 36.5 |
| Total East County | 13,796 | 17,471 | 26.6 |
| Total Grays Harbor County | 59,553 | 66,314 | 11.4 |

SOURCES: U.S. Department of Commerce, Bureau of the Census: 1970 and 1980
Census of Population.

TABLE 5
AUTHORIZED NEW DWELLING UNITS
GRAYS HARBOR COUNTY
1975-1981

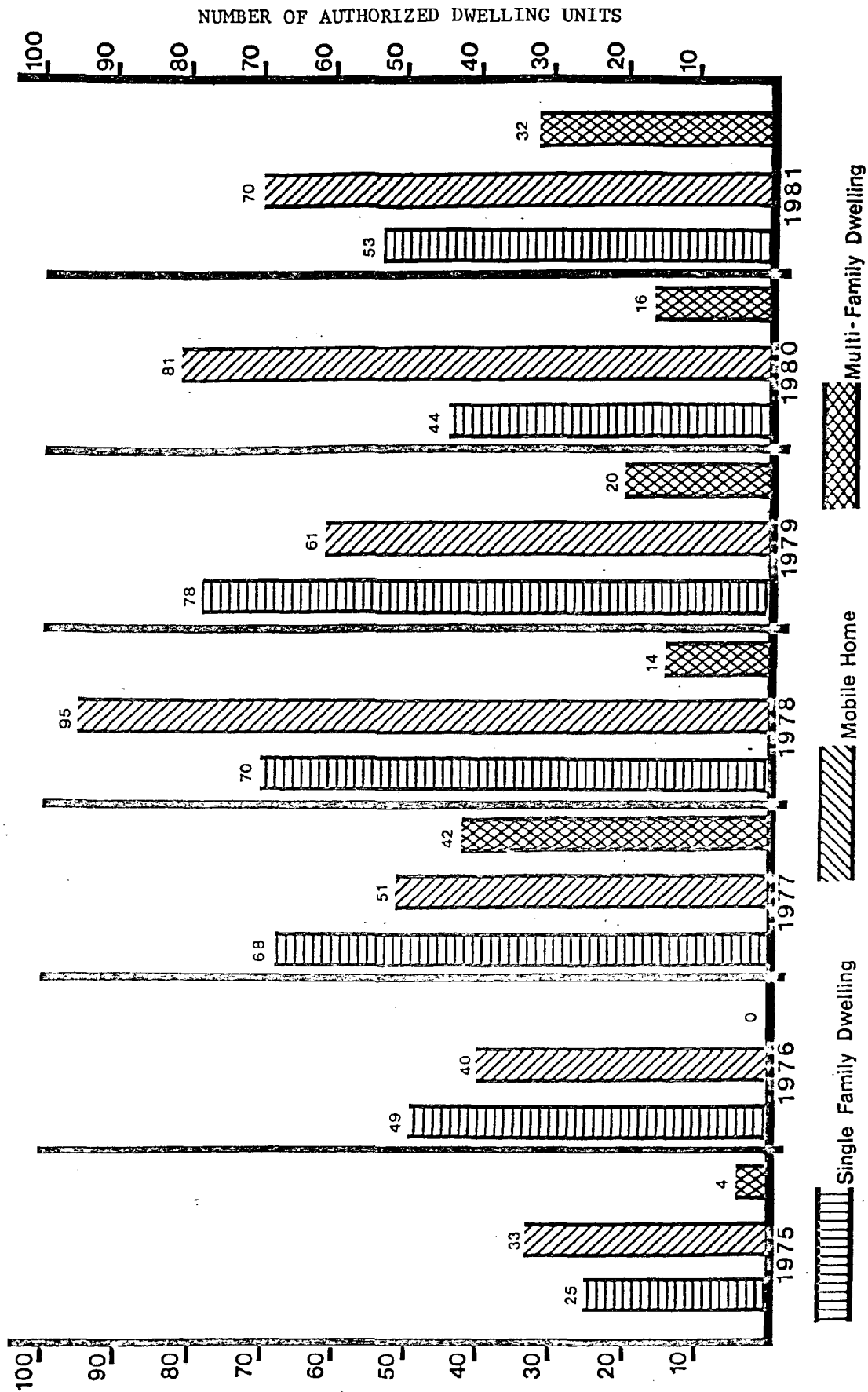
| | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1975- 1981 Total |
|----------------------------------|------|------|------|------|------|------|------|------------------------|
| Montesano City | 17 | 8 | 48 | 32 | 18 | 5 | 32 | 160 |
| Montesano Unincorporated Area | 14 | 33 | 67 | 43 | 39 | 50 | 50 | 296 |
| Elma City | 12 | 26 | 71 | 14 | 47 | 8 | 59 | 237 |
| Elma Unincorporated Area | 24 | 27 | 58 | 74 | 59 | 41 | 52 | 335 |
| McCleary City | 16 | 9 | 17 | 20 | 5 | 8 | 0 | 75 |
| McCleary Unincorporated Area | 5 | 7 | 9 | 24 | 37 | 16 | 19 | 117 |
| Oakville City | N/A | 4 | 2 | 8 | 7 | 6 | 2 | 29 |
| Oakville Unincorporated Area | 13* | 13 | 19 | 25 | 18 | 21 | 15 | 124 |
| Satsop | 6 | 9 | 8 | 13 | 6 | 13 | 19 | 74 |
| Incorporated East County Total | 45 | 47 | 138 | 74 | 77 | 27 | 93 | 501 |
| Unincorporated East County Total | 62* | 89 | 161 | 179 | 159 | 141 | 155 | 946 |
| Total East County | 107 | 136 | 299 | 253 | 236 | 168 | 248 | 1,447 |
| Urban Area** | 221 | 220 | 318 | 320 | 154 | 108 | 111 | 1,452 |
| Beach and Other Areas | 100 | 153 | 256 | 335 | 351 | 230 | 171 | 1,596 |
| TOTAL COUNTY | 428 | 509 | 873 | 908 | 741 | 506 | 530 | 4,495 |

*Includes Building Permits for the City of Oakville for 1975.

**Includes Central Park.

SOURCE: Monitoring Project Table: GH-T.32.5.81, 4/80 and GH-T.5.1, 4/82 (A)

FIGURE 2
 AUTHORIZED DWELLING UNITS BY TYPE
 UNINCORPORATED EAST GRAYS HARBOR COUNTY



Source: Monitoring Project Tables G H-T. 5.103, 1/81
 G H-T. 5.1, 4/82 [A]

and unincorporated areas although the North River and Malone-Porter Divisions include only unincorporated areas. The housing values of the east county census divisions do not appear to differ much from the average county housing values. Three divisions are a little higher than are county average and three divisions are a little lower.

Historically, Grays Harbor County's housing values have been lower than the values for comparable Western Washington Counties, Washington State as a whole, and the United States. This trend continued through 1980. Table 8 compares the housing values for Grays Harbor County, nine other western Washington counties, Washington State, and the United States.

TABLE 6
MEDIAN OWNER-OCCUPIED HOUSING VALUES
GRAYS HARBOR COUNTY AND AREA CITIES
1970-1980

| <u>East County Area</u> | <u>Median Value</u> | <u>Median Value</u> | <u>Percent Change</u> |
|-------------------------|---------------------|---------------------|-----------------------|
| Montesano | \$15,100 | \$46,700 | 209.3 |
| Elma | 13,900 | 43,400 | 212.2 |
| McCleary | 12,300 | 37,000 | 200.8 |
| Oakville | 8,400 | 33,600 | 300.0 |
| <u>Urban Area</u> | | | |
| Aberdeen | 13,500 | 40,300 | 198.5 |
| Hoquiam | 11,800 | 35,900 | 204.2 |
| Cosmopolis | 14,400 | 52,700 | 266.0 |
| <u>Ocean Beaches</u> | | | |
| Ocean Shores | 23,300 | 54,500 | 133.9 |
| Westport | 14,200 | 43,100 | 203.5 |
| Grays Harbor County | 13,700 | 43,200 | 215.3 |
| State Of Washington | \$18,500 | \$59,900 | 223.8 |

Source: U.S. Bureau of the Census: 1970 Census of Housing,
U.S. Bureau of the Census: 1980 Census of Housing.

TABLE 7
 MEDIAN OWNER-OCCUPIED HOUSING VALUES
 Eastern Grays Harbor County Census Division
 1980

| <u>East County Area</u> | <u>Median Value 1980</u> | <u>Percent of Total County Median Value</u> |
|-------------------------|------------------------------|---|
| Elma Division | \$45,200 | 104.6 |
| McCleary Division | 42,400 | 98.1 |
| Malone-Porter Division | 40,500 | 93.7 |
| North River Division | 46,900 | 108.6 |
| Oakville Division | 36,100 | 83.6 |
| Wynoochee Division | 51,200 | 118.5 |
| <u>Ocean Beaches</u> | | |
| North Beach Division | 47,800 | 110.6 |
| South Shore Division | 44,400 | 102.8 |
| Grays Harbor County | \$43,200 | 100.0 |

Source: U.S. Bureau of the Census: 1980 Census of Housing.

TABLE 8
 MEDIAN OWNER-OCCUPIED HOUSING VALUES
 Grays Harbor County and Comparable Counties
 1970-1980

| <u>County</u> | <u>1980 Population</u> | <u>Median Value 1970</u> | <u>Median Value 1980</u> | <u>Percent Change</u> | <u>1980 Home-Owner Vacancy Rates</u> |
|---------------------|----------------------------|------------------------------|------------------------------|---------------------------|--|
| Grays Harbor | 66,314 | \$13,700 | \$43,200 | 215.3 | 1.1 |
| Clallam | 51,648 | 15,700 | 56,000 | 256.7 | 2.0 |
| Cowlitz | 79,548 | 15,800 | 50,400 | 219.0 | 1.5 |
| Jefferson | 15,965 | 14,700 | 52,300 | 255.8 | 2.1 |
| Lewis | 55,279 | 12,700 | 43,000 | 255.4 | 1.5 |
| Mason | 31,184 | 16,000 | 48,300 | 201.9 | 2.3 |
| Pacific | 17,237 | 10,800 | 36,200 | 235.2 | 1.3 |
| Skagit | 64,138 | 16,000 | 51,600 | 222.5 | 2.0 |
| Thurston | 124,264 | 18,600 | 57,000 | 206.4 | 2.4 |
| Whatcom | 106,701 | 17,000 | 56,300 | 231.2 | 1.8 |
| State of Washington | | 18,500 | 59,900 | 223.8 | 2.1 |
| United States | | \$17,100 | \$47,200 | 176.0 | 1.8 |

Source: U.S. Bureau of the Census: 1970 Census of Housing.

U.S. Bureau of the Census: 1980 Census of Housing.

In 1970 Grays Harbor County had the third lowest average housing value of the ten counties with Lewis and Pacific Counties the lowest. In 1980 Grays Harbor County was again the third lowest with Lewis and Pacific at the bottom of the array. Housing values in Grays Harbor County also tended to grow at a slower rate than most of the other ten counties.

Rents also increased during the 1970's. The median rent for Grays Harbor County rose from \$69 in 1970 to \$192 in 1980. During the same period rents for the state as a whole increased from \$94 to \$208.

2.2 Anticipated Impact of the Proposal on Housing

As in the case of population, the proposal is not expected to affect the overall number of units, but should significantly affect their location. While the proposal, especially when taken along with other elements of the County Comprehensive Plan and the Comprehensive Plans of the cities, may restrict potential development in certain areas. It also increases allowable densities in other areas.

As was noted in the discussion of population the areas the proposal recommends be zoned for residential uses will accommodate the growth projected for east Grays Harbor County well beyond the turn of the century.

2.3 Potential Mitigation of Adverse Impacts on Housing

The effects of increased density in certain areas is mitigated by the coordination and resource protection policies contained in the proposal. An improved county subdivision ordinance would improve mitigation of the adverse impacts of the proposal.

3.1 Existing Transportation and Circulation

Existing Road Capacity and Traffic Levels

Roads are perhaps the most basic public facility found in rural areas. Most people in eastern Grays Harbor County travel primarily by automobile. In the eastern portion of Grays Harbor County the availability and condition of roads are significant constraints on rural residential development.

Table 9 summarizes research undertaken by the Grays Harbor County Department of Public Works regarding the condition and capacity of selected roads in the Rural Lands Study area. Map 8 shows the location of these roads.

An examination of Table 9 reveals that only one of the roads selected for study (the southern portion of the South Bank Road) is presently operating below its design capacity. Most of the remaining roads selected are presently operating at levels substantially above their design capacities. Additional

TABLE 9 DESIGN ATTRIBUTES AND AVERAGE DAILY TRIPS (ADT)
FOR SELECTED COUNTY ROADS - 1980.

Page 1 of 3

| Road Name | Road # | Bridges | R.R. Xings | Surface ¹ | ADT (1980) | Required ² Width | Actual ³ Width | Existing ⁴ Design ADT | Required ⁵ Roadway Improvements |
|-----------------------|--------|---|--|----------------------|---------------|--------------------------------|------------------------------|-------------------------------------|--|
| Bush Creek Road | 7797 | None | None | E-F-E | 367 | 4-20-4 | 2-10-2 | Substandard | Widen, realign, shoulders, resurface, intersection. |
| Cloquallum Road | 7815 | 2 Bridges Widen/Replace ⁷ | Upgrade Xing ⁷ | E-F-E | 1290 | 8-24-8 | 2-18-2 | Substandard | Widen, straighten, surface, intersection w/9740. |
| Delezenne Road | 6579 | 3 Bridges, Replace ² | Upgrade Xing ⁷ | E-F-E E | 237 | 4-20-4 | 2-16-2 12 | Substandard | Widen, realign, shoulders, resurface, intersection. ⁷ |
| Elma-Hicklin Road | 7974 | New Bridges 2 wooden | 2 Xings Upgrade Xings ⁷ | E-F-E E | 589 | 6-22-6 | 1-20-1 10 | <400, in- adequate shoulders | Widen, realign, shoulders, resurface. |
| Elma-McCleary Road | 9740 | 5 Bridges O.K. | None | E-J-E | 4115 | 8-24-8 | 4-20-4 | <400 | Marginally adequate surfacing, shoulders. |
| Heise Road | 89151 | 1 Bridge ⁷ O.K. | None | E-F-E | 101 | 4-20-4 | 2-16-2 | Substandard | Widen, shoulders, resurfacing. |
| Hicklin Road | 7700 | None | Upgrade Xing | E-F-E | 208 | 4-20-4 | 2-18-2 | Substandard | Wye Conn @ 9740, widen. |
| Mox Chehalis Road | 8629 | Bridges O.K. ⁷ | None | E-F-E | 885 | 8-24-8 | 2-20-2 | <400, in- adequate shoulders | Shoulders, realign- ment, surface. |
| Mox Chehalis East | 8629 | None | None | E-F-E | 488 | 6-22-6 | 2-16-2 | Substandard | Widen, shoulders, realign, surface. |
| Porter Creek Road | 9654 | 2 Bridges, Replace ¹ | Upgrade Xing | E-F-E | 1164 | 8-24-8 | 4-20-4 | <400 | Widen, shoulders, surfacing. |

Continued to next page

TABLE 9 DESIGN ATTRIBUTES AND AVERAGE DAILY TRIPS (ADT)
FOR SELECTED COUNTY ROADS - 1980 CONTINUED.

Page 2 of 3

| Road Name | Road # | Bridges | R.R. Xings | Surface ¹ | ADT (1980) | Required ² Width | Actual ³ Width | Existing ⁴ Design ADT | Required ⁵ Roadway Improvements |
|-----------------------|---------------|----------------------------------|------------|----------------------|---------------|--------------------------------|------------------------------|-------------------------------------|---|
| Powers Creek Road | 7833 | New Bridges 2 one-lane | None | E | 56 | 4-20-4 | 20 | Substandard | Widen, shoulders, surface, intersection. |
| Sand Creek Road | 87042 8721 | None | None | E E-F-E | 104 | 4-20-4 | 16 2-10-2 | Substandard | Widen, shoulders, surfacing. ⁷ |
| South Bank Road (No.) | 96412 | 1 Bridge O.K. | None | E-I-E | 3390 | 8-24-8 | 4-22-4 | <750, in- adequate shoulders | Realign, shoulders, surfacing. ⁷ |
| South Bank Road (So.) | 96412 | 1 Bridge O.K. | None | E-I-E | 534 | 6-22-6 | 4-22-4 | <750 or <1200 ⁶ | Realign, shoulders, surfacing. |
| South Union Road | 88982 | 1 Bridge Replace | None | E-F-E | 173 | 4-20-4 | 1-18-1 | Substandard | Widen, shoulders, surfacing. |
| Stamper Road | 76732 | 1 Bridge Replace ⁷ | None | E-F-E | 234 | 4-20-4 | 2-16-2 | Substandard | Surface, intersection, widen, realign, shoulders. |
| West Satsop Road | 9725 | 1 Bridge | None | E-F-E | 975 | 8-24-8 | 3-20-3 | <400 | Widen, shoulders, realign, surface. |
| | 7323 | O.K. | | E-F-E | 165 | 4-20-4 | 2-12-2 | Substandard | Widen, shoulders, realign, surface. |

Continued to next page

TABLE 9 DESIGN ATTRIBUTES AND AVERAGE DAILY TRIPS (ADT)
FOR SELECTED COUNTY ROADS - 1980 CONTINUED.

SOURCE: Grays Harbor County Department of Public Works.

¹Letters indicate shoulder-surface-shoulder composition as follows: I = asphalt; E = gravel; F = bituminous surface treatment; J = concrete.

²Accepted roadway design standards suggest that road carrying the volume of traffic shown in the Average Daily Trips (ADT) column should have a roadway width configuration as shown (shoulder-surface-shoulder). Standards regarding horizontal and verticle orientation are of equal importance, but are not included in this table.

³Numbers indicate the existing shoulder-surface-shoulder width for any particular road section at its narrowest point.

⁴Numbers indicate the approximate maximum design capacity for any particular road. The term "substandard" indicates that the road is presently exceeding its design capacity.

⁵The types of improvements indicated would be necessary to bring a given roadway up to the design standard appropriate to its existing traffic load (ADT).

⁶Less than 750 ADT, or less than 1200 ADT with inadequate shoulders.

⁷Some improvements to be made under the Grays Harbor County Six-Year Transportation Improvement Program (1980-1985).

EASTERN GRAYS HARBOR COUNTY



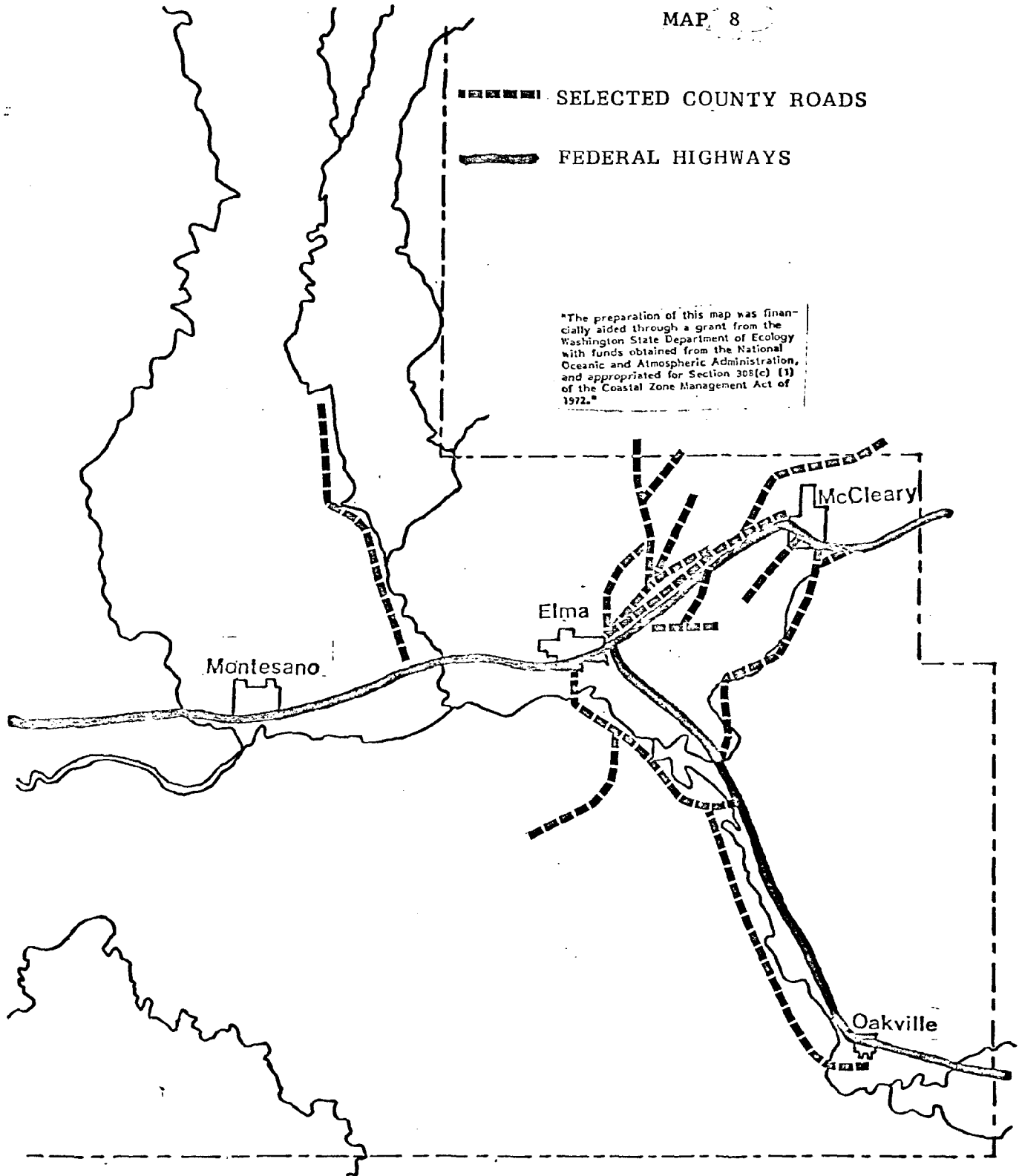
0 5
MILES

MAP 8

SELECTED COUNTY ROADS

FEDERAL HIGHWAYS

"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."



residential development along these roads or in areas served by these roads will worsen an already undesirable situation, unless necessary road improvements are made.

Several improvement projects for roads within the study area have been budgeted under the Grays Harbor County Six-Year Transportation Improvement Program (see Table 9 note 7). Most of these improvements are necessary to overcome serious safety hazards, and traffic carrying capacity will generally not be increased.

Parking Facilities

Street and lot parking exist in all the incorporated areas of the county. In addition there are two major parking lots in unincorporated East County, which are located at the County Fairgrounds and the Satsop Nuclear Construction Site. Within unincorporated Grays Harbor County, smaller parking lots are located on the site of most commercial and industrial uses. Offstreet parking is required by the county zoning ordinance for all residential, commercial, and industrial uses.

Inadequate parking space has been reported in Aberdeen, Montesano, and Elma.

Transit Services

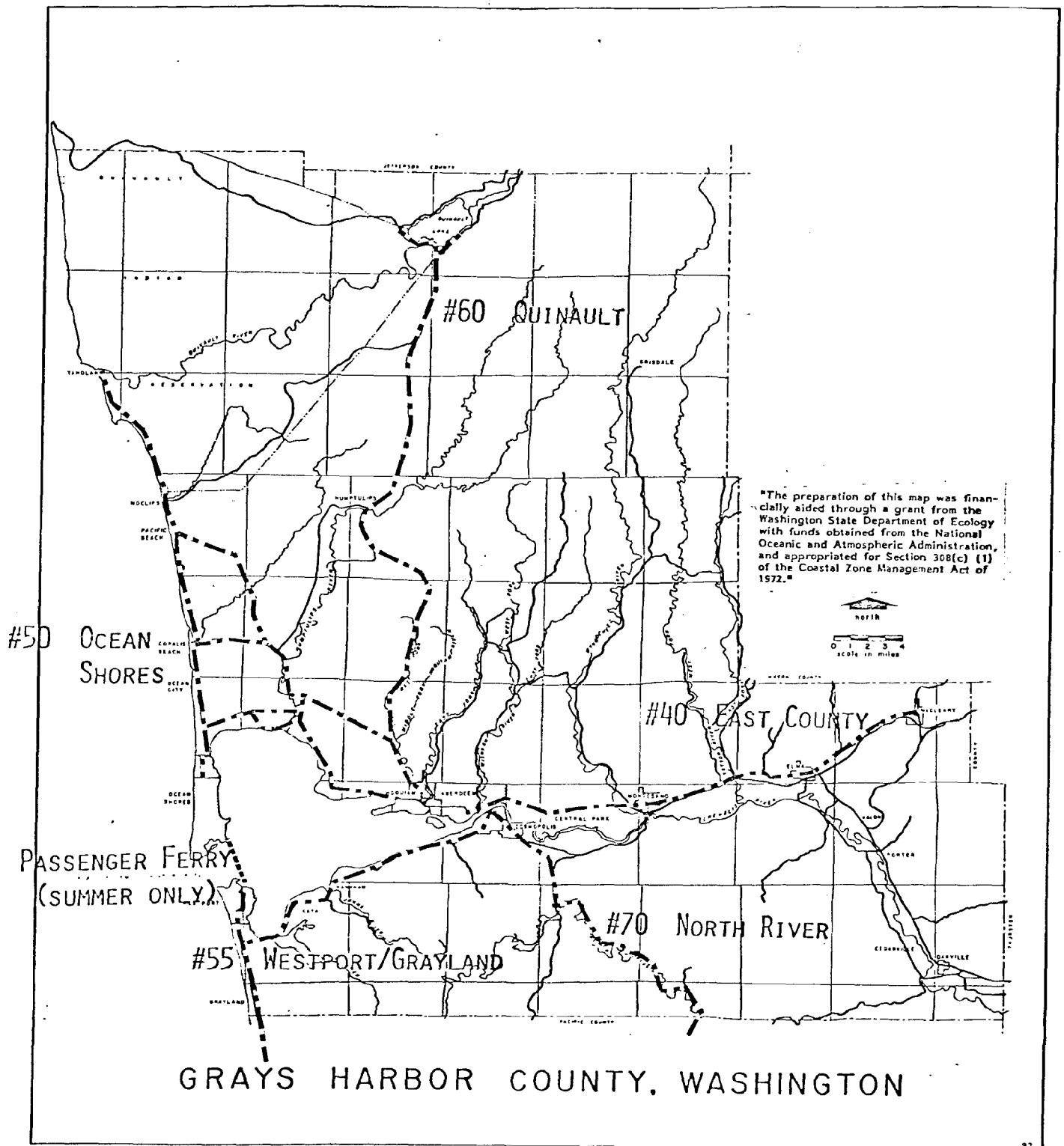
Eastern Grays Harbor County is served by an excellent transit system which links together three major activity centers throughout the county. The transit system is used for trips to work, shopping trips, recreational trips and educational trips.

Maps 9 and 10 show fixed transit routes for eastern Grays Harbor County. Routes shown on Map 9 are operated five or more days per week, while those shown on Map 10 operate either one or two days per week. Table 10 summarizes the days of service, hours of service and number of trips per day for these routes.

Fares on all scheduled routes (except the Westport-Ocean Shores ferry) are 25 cents for adults, and children under six years ride free (with an adult). Unlimited ride monthly passes are available for ten dollars. Transfers are free, and are good for continuous transfer from one route to another and for "stop and go" along any route for up to one hour. Buses may be flagged anywhere along their routes.

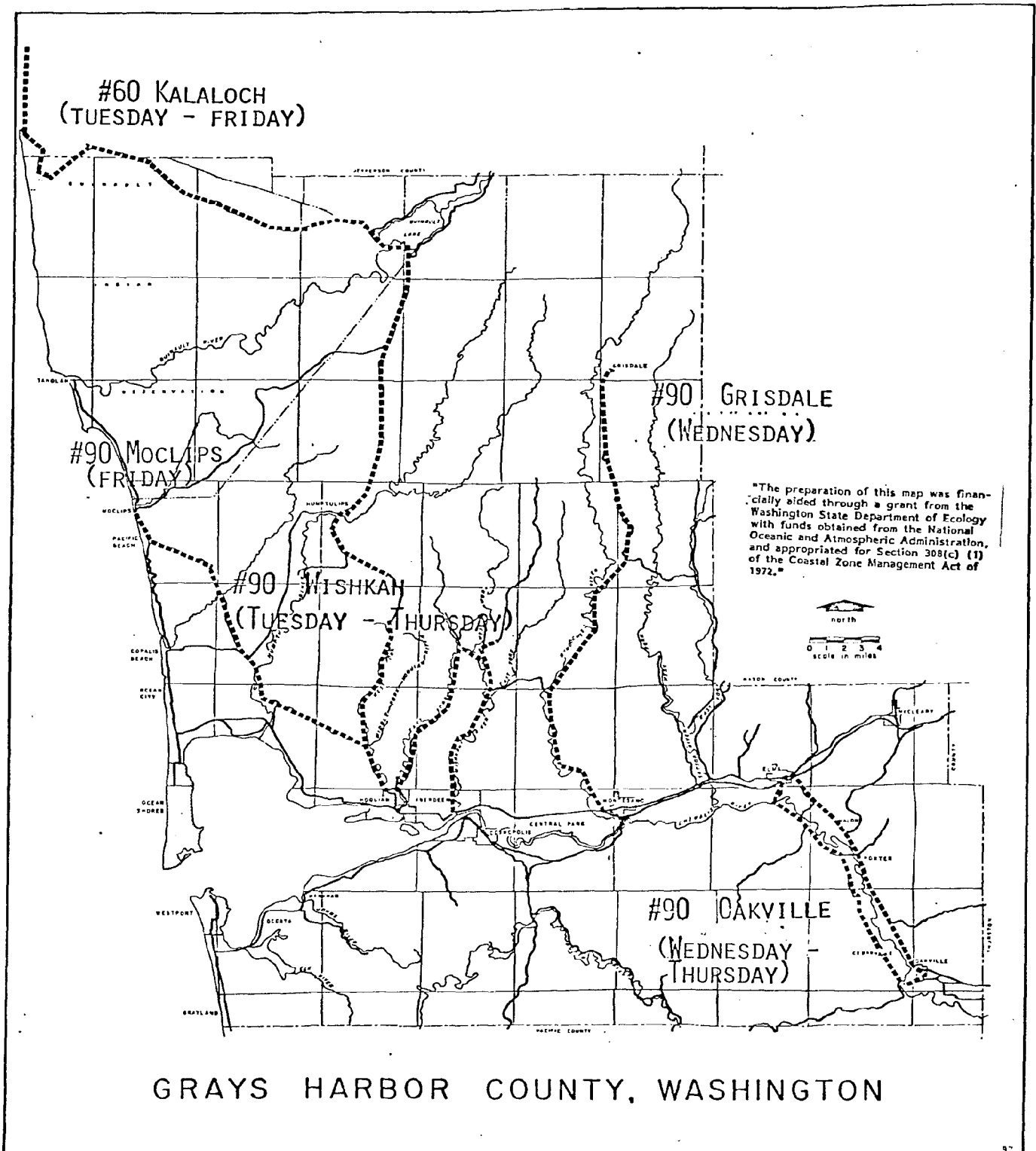
Flexible route, or "dial-a-ride" service is available in the areas shaded on Map 11. Dial-a-ride buses operate on an established route and schedule and may be flagged down anywhere along that route; however, the schedule is flexible enough to allow route deviations on a demand/response basis. Thus, door-to-door service is possible, and areas which would otherwise be unfeasible to serve are served. Persons requesting pick-up must call before that day's route schedule has begun, preferably the day before. Dial-a-ride fares are the same as for fixed route service, and riders may transfer.

GRAYS HARBOR TRANSIT NON URBAN AREA FIXED ROUTES (DAILY SERVICE)



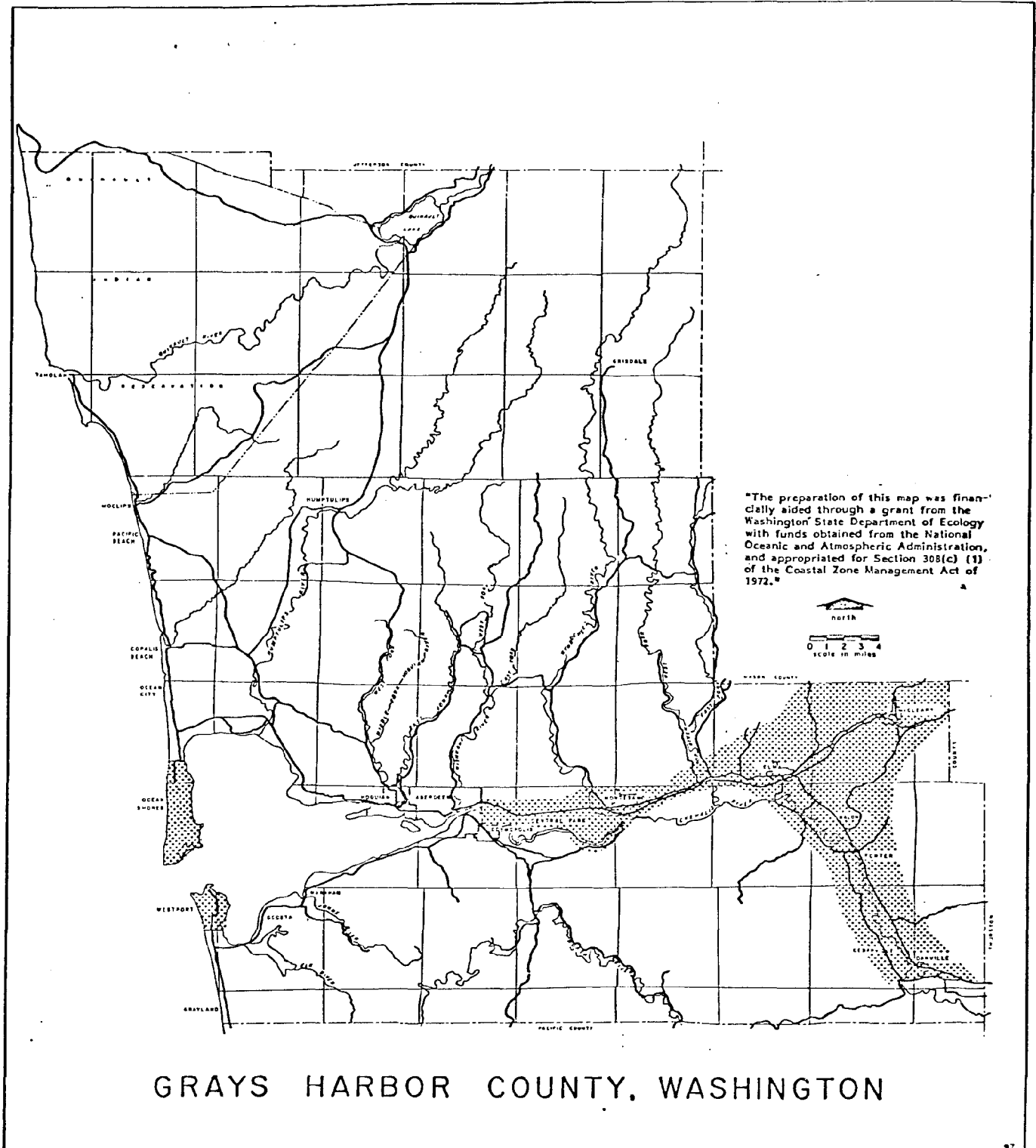
SOURCE: GRAYS HARBOR TRANSPORTATION AUTHORITY, PUBLISHED SCHEDULES.

GRAYS HARBOR TRANSIT NON URBAN AREA FIXED ROUTES (NON-DAILY SERVICE)



SOURCE: GRAYS HARBOR TRANSPORTATION AUTHORITY, PUBLISHED SCHEDULES.

GRAYS HARBOR TRANSIT DIAL-A-RIDE SERVICE AREAS



GRAYS HARBOR COUNTY, WASHINGTON

SOURCE: GRAYS HARBOR TRANSPORTATION AUTHORITY, PUBLISHED SCHEDULES.

Dial-a-ride service is generally available from 9:00 a.m. to 4:30 p.m. on weekdays. Route schedules should be consulted for the exact times this service is available in particular locales.

Waterborne, Rail and Air Traffic

At one time the Chehalis River was used as a major form of transportation. It was used to transport commercial and industrial goods. With the creation of the present system of railways and roads, its use declined. Today, waterborne transport primarily occurs on Grays Harbor with the many ships which export timber cargos from the port.

The Burlington Northern and Union Pacific Railroads provide regular freight service to Grays Harbor but no passenger service.

Airports are located in Hoquiam, Westport, Ocean Shores, and Elma. None provide scheduled commercial air service. However, Hoquiam and Elma airports do provide limited charter service.

Traffic Hazards

There are currently a number of significant traffic hazards in eastern Grays Harbor County. These hazards are summarized below.

State Highway 12 through Central Park is one of the most hazardous stretches of roadway in Grays Harbor County if not in the State of Washington. While not within the Rural Land study area, many residents of the study area use the highway when travelling to the Aberdeen-Hoquiam area for jobs, shopping, and recreation.

Within the study area, many of the crossings, entrances to and exits from State Highway 12, east of Montesano are hazardous. Most of the crossings are at grade. Many of the entrances and exits are quite abrupt and lack acceleration and, to a lesser extent, deceleration lanes. The Washington State Department of Transportation has a continuing program to consolidate and improve the highway entrances, exits, and crossings. This program will reduce these hazards over time.

Many of the railroad crossings where county roads cross railroad lines are quite hazardous. The hazardous crossings do not have traffic control barriers and several have limited sight distances. These hazards have contributed to a significant number of automobile-train accidents.

A number of hazards are presented by the substandard county roads serving east Grays Harbor County. A number of these roads are narrow, or have tight corners, or have poor alignment, or have poor sight distances or a combination of these problems. Some of the private roads serving exempt five acre developments are also quite hazardous. The hazardous roads tend to be narrow, to

have steep grades, to be poorly aligned, and to have inadequate sight distances. As these exempt developments are built out the resulting increases in traffic will increase traffic hazards on these roads.

In general, Grays Harbor County does not have adequate design and construction standards for streets and intersections within short and long subdivisions and exempt divisions. A recent analysis of traffic safety measures in Grays Harbor County by the National Safety Council documented that the current county subdivision ordinance lacks a number of provisions necessary to ensure that streets and intersections in short or long subdivisions are safe. The National Safety Council recommended that the subdivision ordinance be expanded to include these necessary standards.⁶ Until the county subdivision ordinance is updated to include these design and construction standards, the potential exists that poorly designed, unsafe streets will be allowed within new developments.

3.2 Anticipated Impact of the Proposal on Transportation/Circulation Vehicular Transportation Generated

The development accommodated by the Rural Lands proposals is projected to generate an additional 12,500 vehicle trips per day by 1990. This would be a 24 percent increase over the estimated number of vehicle trips generated by the present residents of unincorporated eastern Grays Harbor County. A vehicle trip is a one way movement of a car, truck or service vehicle.

Anticipated Impact of the Proposal on the Circulation System

The Rural Lands proposals are expected to generate the same number of vehicle trips by 1990 as would be generated by eastern Grays Harbor County's existing zoning. However, the trips generated by residents if the rural lands proposals are adopted would be shorter and there would be a greater potential for transit use because of a more compact land use pattern.

The increased vehicle trips will probably increase congestion in some areas. However, this increase would be less than the current zoning provisions since the destination of most trips (job sites and commercial area) will not be greatly affected by the proposal, while trip length would tend to be somewhat shorter.

The increased traffic will increase traffic hazards particularly at state highway entrances and exits and at a few railroad crossings. However, these increases in hazards will be less than under the existing zoning provisions because the trip length will be shorter and the rural lands policies tend to avoid increased densities in areas with serious traffic hazards.

If poorly designed subdivisions are permitted or new subdivisions allowed to locate in areas where identified traffic hazards are not corrected, hazardous traffic conditions could increase substantially.

3.3 Potential Mitigation for Adverse Impacts on Transportation/Circulation

An improved subdivision ordinance would reduce the problems associated with poor subdivision design and inadequate roads.

Adoption by the county of the optional one-quarter of one percent excise tax on real estate sales which is earmarked for capital improvements, and using these funds to improve county roads could also help lessen potential impacts. However, the amount of money generated by the optional real estate excise tax would be relatively small, particularly when compared to the amount of road improvements required.

4.1 Existing Public Services

Fire Protection

Fire protection in east Grays Harbor County is provided by five Fire Districts, namely:

- Fire District No.1 (Oakville);
- Fire District No.2 (Montesano);
- Fire District No.5 (Elma);
- Fire District No.12 (McCleary); and
- Fire District No.15 (Arctic).

The boundaries of these districts and the location of fire stations within them are shown on Map 12.

Map 13 indicates relative levels of fire protection service for the study area, based on a rating system used by the Washington Surveying and Rating Bureau for insurance purposes.⁷ The map shows three categories of protection level. Classification 8a represents the highest level of protection existing in east Grays Harbor County (outside of areas served by fire hydrants). Classification 9 represents a (relatively) moderate level of fire protection. Classification 10 indicates "that the fire protection facilities (are) not considered adequate for recognition."⁸

Table 10 illustrates the effect of these classifications on annual fire insurance premiums for a hypothetical \$50,000 home with standard coverage. Assumptions regarding type of coverage are held constant for all classifications.

Most of the areas designated as "rural lands" lie within Classification 8a or Classification 9 areas. The most significant exceptions are those areas lying in the Satsop River Valley north of the confluence of the east and west forks; those areas in the Delezena Creek vicinity; those areas along Black Creek; and those areas lying mostly north of White Star (sometimes called "Whites.") Compounding fire protection problems in the areas mentioned above is the fact that most of the roads serving them are dead ends with no alternate access. A bridge or roadway washout or other obstruction on these roads would temporarily cut the areas off to any fire protection service.

二



二



1

1

TABLE 10
FIRE INSURANCE PREMIUMS
FOR HYPOTHETICAL \$50,000 HOME

| <u>CLASSIFICATION</u> | <u>ANNUAL PREMIUM</u> |
|-----------------------|-----------------------|
| 8 | \$113.00 |
| 8a | 146.00 |
| 9 | 214.00 |
| 10 | 288.00 |

Classification 8 exists only in those areas served by fire hydrants.
SOURCE: Mr. Johnston, Washington Surveying and Rating Bureau.

Sheriff/Police Protection

Police protection in East County is provided by the Grays Harbor County Sheriff's Department and the police departments of Montesano, Elma, McCleary, and Oakville. As with fire protection, the level of police protection is highest closest to the urban centers. The Sheriff's Department and the east county police departments have interlocal agreements to back each other up in the case of emergencies.

While crime (offense) rates in both the incorporated and unincorporated areas of East County are generally higher than the national average for comparably sized areas, in 1980 unincorporated Grays Harbor County and all the east county cities but Elma had offense rates below a statewide average for similarly sized Washington State communities. Table 11 displays recent crime trends within the county.

Schools

Portions of eastern Grays Harbor County are served by eight separate school districts. For the purposes of this report, we are particularly interested in five of them, namely:

Elma District No. 67/68;
McCleary District No. 65;
Montesano District No. 66;
Oakville District No. 400; and
Satsop District No. 104.

The boundaries of these school districts and the location of schools within them are shown on Map 14.

Portions of eastern Grays Harbor County are also served by Aberdeen District No.5, Mary M. Knight District No.79, Wishkah Valley District No.117, Cosmopolis District No.99, and Brooklyn District No.300. These areas are of minor interest to the Rural Lands Study.

EASTERN GRAYS HARBOR COUNTY



0 5
MILES

MAP 14

SCHOOL DISTRICT BOUNDARIES AND SCHOOL LOCATION

E

ELEMENTARY AND JR. HIGH

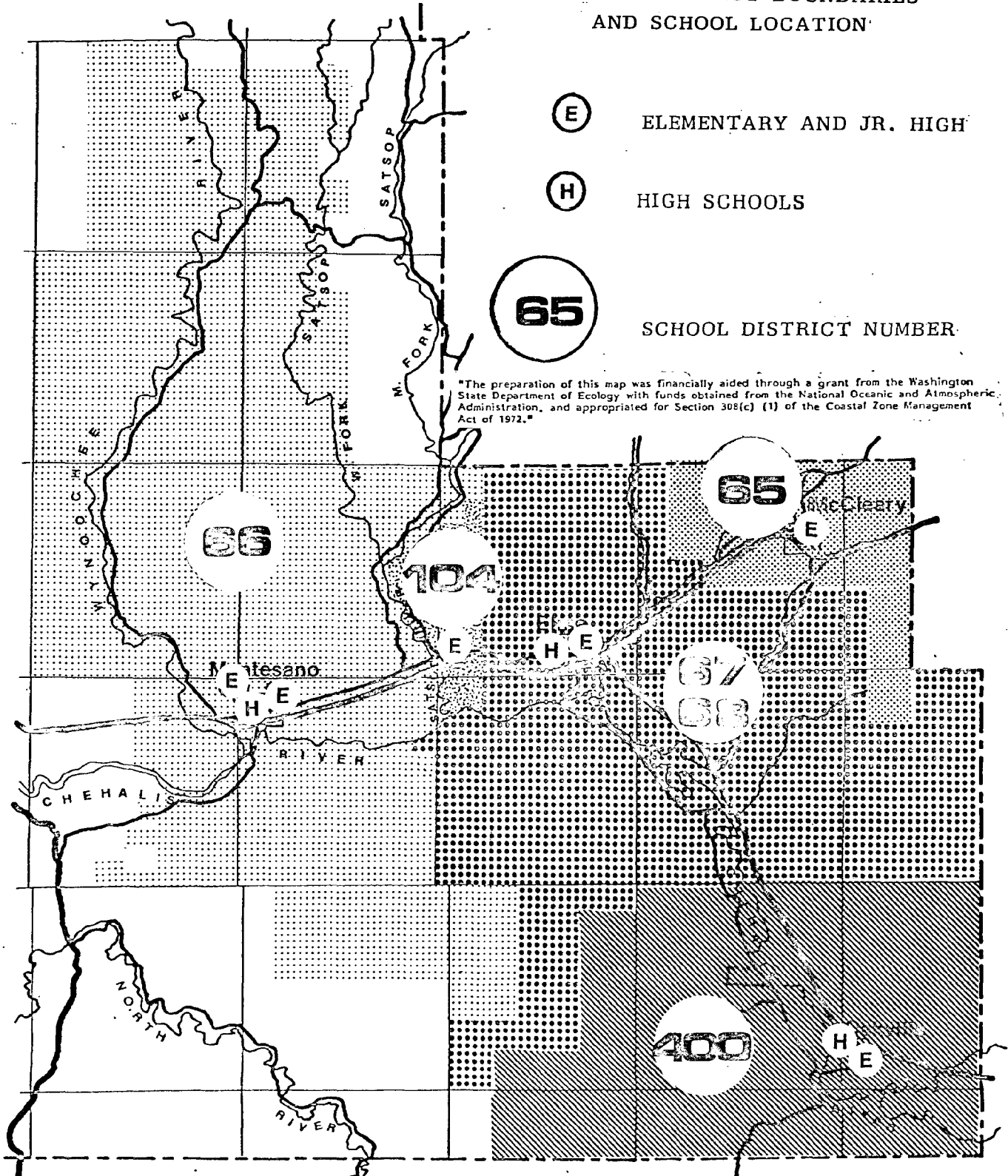
H

HIGH SCHOOLS

65

SCHOOL DISTRICT NUMBER

"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."



SOURCE: Grays Harbor Baseline/Monitoring Data, Map # GH-M.32.6.1, 12/77,
Grays Harbor Regional Planning Commission.

TABLE 11
OFFENSE RATES

| Area | Local Offense Rates | | | | | Washington State Offense Rates for Comparably Sized Areas | | | | | National Offense Rates For Comparable Sized Areas | | | | |
|----------------|---------------------|-------|--------|--------|--------|--|-------|-------|-------|-------|--|-------|-------|-------|-------|
| | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1979 | 1980 | 1979 | 1980 | 1975 | 1976 | 1977 | 1978 | 1979 |
| Elma | 71.25 | 59.92 | 110.93 | 128.86 | 112.36 | 106.99 | 74.29 | 82.97 | 74.29 | 82.97 | 41.13 | 39.88 | 39.06 | 40.30 | 45.04 |
| McCleary | 21.18 | 30.48 | 24.33 | 19.82 | 77.86 | 76.11 | 74.29 | 82.97 | 74.29 | 82.97 | 41.13 | 39.88 | 39.06 | 40.30 | 45.04 |
| Montesano | 34.76 | 34.05 | 44.80 | 70.36 | 57.89 | 44.96 | 74.29 | 82.97 | 74.29 | 82.97 | 41.13 | 39.88 | 39.06 | 40.30 | 45.04 |
| Oakville | -- | -- | -- | -- | -- | 35.38 | 74.29 | 82.97 | 74.29 | 82.97 | 41.13 | 39.88 | 39.06 | 40.30 | 45.04 |
| Unincorporated | | | | | | | | | | | | | | | |
| Rural Area | 40.34 | 40.99 | 41.63 | 40.14 | -- | 32.98 | 38.89 | 34.79 | 32.98 | 34.79 | 17.67 | 17.68 | 17.26 | 16.56 | 17.44 |

SOURCE: Tables GH-T.11.106-114, 10/80 and Washington State UCR Program.
-- = unavailable.

Enrollment

School district enrollment figures for October 1975 through October 1981 are given in Table 12. These figures are expressed as F.T.E.s, that is "full-time equivalents."

As table 12 indicates, the Elma School District has experienced steady growth in enrollment between 1975 and 1980. Between October 1975 and October 1980, enrollment increased by 7.8 percent (125.77 F.T.E. students). McCleary School District has experienced a more dramatic increase of 19.8 percent (58.5 F.T.E. students) over the same period. It is interesting to note that most of the large enrollment increase in McCleary between 1978 and 1979 was due to a single large scale residential development. This illustrates the kind of impact that land use decisions have on public education systems.

Between 1980 and 1981 enrollments declined by 5.7 percent in the Elma School District (98.74 F.T.E. students). Enrollment in the McCleary School District grew by only four tenths of a percent (1.5 F.T.E. students).

TABLE 12
SCHOOL DISTRICT ENROLLMENT
OCTOBER 1975 THROUGH OCTOBER 1981

| | Oct. 1, 1975 | Oct. 1, 1976 | Oct. 1, 1977 | Oct. 1, 1978 | Oct. 1, 1979 | Oct. 1, 1980 | Oct. 1, 1981 | Percent Change 1975-80 (One-Yr.) | Percent Change 1980-81 (One-Yr.) |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---|---|
| ELMA | | | | | | | | | |
| K-6 | 684.5 | 688.5 | 700.0 | 740.5 | 777.0 | 782.0 | 758.0 | | |
| 7-12 | 919.0 | 917.0 | 937.5 | 922.4 | 947.6 | 947.27 | 872.33 | | |
| Total | 1,603.5 | 1,605.5 | 1,637.5 | 1,662.9 | 1,724.6 | 1,729.27 | 1,630.33 | 7.8 | -5.7 |
| McCLEARY | | | | | | | | | |
| K-8 | 299.5 | 311.0 | 311.0 | 319.0 | 381.5 | 358.0 | 359.5 | | |
| Total | 299.5 | 311.0 | 311.0 | 319.0 | 381.5 | 358.0 | 359.5 | 19.5 | 0.42 |
| MONTESANO | | | | | | | | | |
| K-6 | 754.0 | 719.0 | 698.0 | 738.0 | 740.0 | 740.0 | 741.5 | | |
| 7-12 | 723.0 | 729.0 | 697.0 | 735.0 | 702.0 | 689.2 | 727.2 | | |
| Total | 1,477.0 | 1,448.0 | 1,395.0 | 1,473.0 | 1,442.0 | 1,429.2 | 1,468.7 | -3.2 | 2.8 |
| OAKVILLE | | | | | | | | | |
| K-8 | 169.5 | 146.0 | 155.5 | 176.5 | 179.5 | 175.5 | 190.5 | | |
| 9-12 | 195.0 | 179.0 | 160.0 | 165.0 | 165.0 | 162.0 | 142.0 | | |
| Total | 364.5 | 325.0 | 315.5 | 341.5 | 344.5 | 337.5 | 332.5 | -7.4 | -1.5 |
| SATSOP | | | | | | | | | |
| 1-6 | 86.0 | 71.0 | 63.0 | 75.0 | 61.0 | 67.0 | 58.0 | | |
| Total | 86.0 | 71.0 | 63.0 | 75.0 | 61.0 | 67.0 | 58.0 | -22.1 | -13.4 |

SOURCE: "Actual" figures derived from Grays Harbor Baseline/Monitoring Data, Grays Harbor Regional Planning Commission.

Enrollment in the Montesano School District has fluctuated near but slightly below the 1975 level for the past six years. For the entire period, enrollment is down by 0.6 percent (8.3 F.T.E. students). Oakville School District enrollment has fluctuated more radically, reaching its lowest point during the 1977-78 school year and then increasing until 1980. October 1981 enrollment is 8.8 percent (32 F.T.E. students) below that of October 1975. The largest (percentage) decline in enrollment has been experienced by the Satsop School District. October 1981 enrollment was 32.6 percent (28 F.T.E. students) lower than October 1975 enrollment.

Certified Staff

One indication of the level of service available in a given school district is the relationship between the number of students enrolled and the number of certified staff employed. Table 13 gives the number of certified staff per 1000 students for each school district in eastern Grays Harbor County. Also shown is a figure which indicates how each district's staff/student ratio compares with the statewide average.

An Index of State to Local Ratios of 1.00 indicates that the local staff/student ratio is equal to the statewide average ratio. An Index of .90 means the local ratio is 10 percent lower (fewer staff per student) than the statewide average, and an Index of 1.10 means the local ratio is 10 percent greater (more staff per student) than the statewide average.

The table indicates that, with the exception of the Oakville School District, eastern Grays Harbor County school districts lag behind the statewide average for number of staff per student. In the case of Elma, the disparity is minor, as that District's staff/student ratio is 94 percent of the statewide average ratio. More serious is the case of the Satsop School District, which has a staff/student ratio of only 76 percent of the statewide average.

East Grays Harbor County districts have improved their staff per student situation since 1974-75, both in real numbers and relative to other schools in the state.

Physical Facilities

An important indicator of the ability of school facilities to adequately serve existing and future enrollment is the amount of facility square footage available per student. The State of Washington uses the following space per student standards in making its school district funding allocations:

| | |
|---------------------|---------------------------------------|
| Kindergarten | 45 sq. ft. per student |
| Grades 1 through 6 | 90 sq. ft. per student |
| Grades 7 through 12 | 130 sq. ft. per student. ⁹ |

Table 14 gives square footage per student figures for the five east County school districts. The figures cover the past five years, and are broken into primary and secondary school categories.

A general feeling for the level of crowding or reserve capacity existing in east county schools can be gained by comparing the figures in Table 14 with the state standards listed above. However, caution must be exercised in making such comparisons, especially when dealing with smaller schools. First,

TABLE 13
CERTIFIED STAFF/STUDENT RATIOS

| | 1974-75 | 1975-76 | 1976-77 | 1977-78 | 1978-79 | 1979-80 | 1980-81 |
|---|---------------|--------------|---------------|---------------|---------------|---------------|---------------|
| <u>ELMA</u> Certified Staff/1000 Students Index of Local Ratios to State | 47.32 .88 | 49.15 .92 | 49.04 .92 | 50.69 .92 | 52.53 .97 | 52.78 .91 | 55.36 .94 |
| <u>McCLEARY</u> Certified Staff/1000 Students Index of Local Ratios to State | 41.93 .78 | 45.58 .85 | 43.94 .82 | 46.62 .85 | 44.64 .82 | 45.61 .79 | 53.00 .90 |
| <u>MONTESANO</u> Certified Staff/1000 Students Index of Local Ratios to State | 41.16 .76 | 43.49 .82 | 44.85 .84 | 49.46 .90 | 46.50 .86 | 48.33 .84 | 52.40 .89 |
| <u>OAKVILLE</u> Certified Staff/1000 Students Index of Local Ratios to State | 60.11 1.11 | 43.49 .82 | 61.58 1.15 | 66.56 1.21 | 61.49 1.14 | 66.77 1.16 | 65.19 1.11 |
| <u>SATSOP</u> Certified Staff/1000 Students Index of Local Ratios to State | 41.10 .76 | 34.88 .65 | 42.25 .79 | 47.42 .87 | 40.00 .74 | 40.98 .71 | 44.78 .76 |

SOURCE: Grays Harbor Baseline/Monitoring Data, Grays Harbor Regional Planning Commission.

TABLE 14
SQUARE FOOTAGE AVAILABLE PER STUDENT

| | May 1977 | May 1978 | May 1979 | May 1980 | May 1981 | Enrollment (F.T.E.) May 1981 |
|--------------------------|------------------|------------------|------------------|------------------|-------------------------------|---------------------------------|
| ELMA K-6 7-12 | 69.05 152.12 | 74.82 155.78 | 73.15 158.14 | 67.16 157.56 | 70.42 155.21 | 763.00 910.78 |
| McCLEARY 1-8 | 112.21 | 102.90 | 89.51 | 89.24 | 91.75 ¹ | 380.00 |
| MONTESANO K-6 7-12 | 75.91 182.11 | 75.07 185.62 | 70.55 177.98 | 73.63 188.04 | 80.10 189.80 | 745.00 661.10 |
| OAKVILLE K-8 9-12 | 110.57 286.73 | 107.25 273.04 | 100.30 275.44 | 102.29 282.88 | 100.30 ¹ 395.45 | 231.50 88.00 |
| SATSOP 1-6 | 79.22 | 79.22 | 111.03 | 136.51 | 128.11 | 65.00 |

SOURCE: Grays Harbor Baseline/Monitoring Data, Grays Harbor Regional Planning Commission.
May 1980 and May 1981 figures computed by GHRPC staff.

¹The inclusion of grades 7 and 8 with primary grades makes it difficult to apply State standards referred to in text. Based upon proportion of enrollment by grade, a standard of approximately 100 square feet per student would seem appropriate.

the provision of facilities such as gymnasiums and auditoriums in schools with small enrollments inflate the square footage per student figures more than such facilities inflate the figures for schools with large enrollments.

Second, from the data given, one cannot determine the actual number of students by which a district is overcrowded or, conversely, the number of additional students which could be accommodated. It should be noted that Oakville High School, with 395.45 square feet available to each of its 88 students, may be less able to accommodate an additional 50 students than would Montesano High School, with 189.80 square feet available to each of its 661.1 students.

Finally, small school districts lack the flexibility to adjust facility use in response to changes in the number and age composition of their students. Thus, a high square feet per student figure may simply indicate that some available space is presently impractical to use due to the composition of the school population.

These factors tend to result in a greater space per student need in small districts relative to large districts.

With these caveats in mind, a few generalizations can be made regarding the ability of existing facilities to accommodate enrollment increases. It is clear that elementary schools in Elma, Montesano and (to a somewhat lesser extent) McCleary are experiencing significant overcrowding. Oakville's elementary school appears to be operating at or near capacity, while Satsop's school may have some reserve capacity; however, this situation could change rapidly due to these districts' small total enrollments. The three east county high schools appear to be in a better position to accommodate enrollment increases than do the elementary schools.

Parks and Recreation Facilities

A large variety of outdoor recreation areas are available in east Grays Harbor County. These include lakes and rivers to swim and fish in and forests to hunt or hike in. The existing recreation facilities serving unincorporated Grays Harbor County are shown on Map 14 and while there is a variety of recreation facilities, there is a shortage of developed parks and recreational facilities, including: swimming pools, ball fields, neighborhood parks, play fields, and picnic areas. These deficiencies together with the available recreation facilities are documented in the Grays Harbor County Parks and Recreation Plan adopted in 1982.

The incorporated cities and towns in East County all have parks where local residents can go for walks or lay in the sun. In addition, play fields can also be found in these East County towns. The cities and towns also have deficiencies in developed recreational facilities.

MAP 15
EXISTING RECREATION FACILITIES SERVING PRIMARILY
UNINCORPORATED GRAYS HARBOR COUNTY POPULATION

LEGEND

1. Fallor Lake
2. Swinging Bridge Park
3. Lake Aberdeen
4. Lake Sylvia State Park
5. Oakridge Golf Course
6. Fair Grounds
7. ORV Park
8. Highlands Golf Course
9. Lions Park
10. Elks Park
11. Taholah Ball Field

Significant Recreational Areas

Playfields, etc.

Parks, County serving

Special Purpose Facilities

Golf Courses (public)

Open Space/Hunting Areas

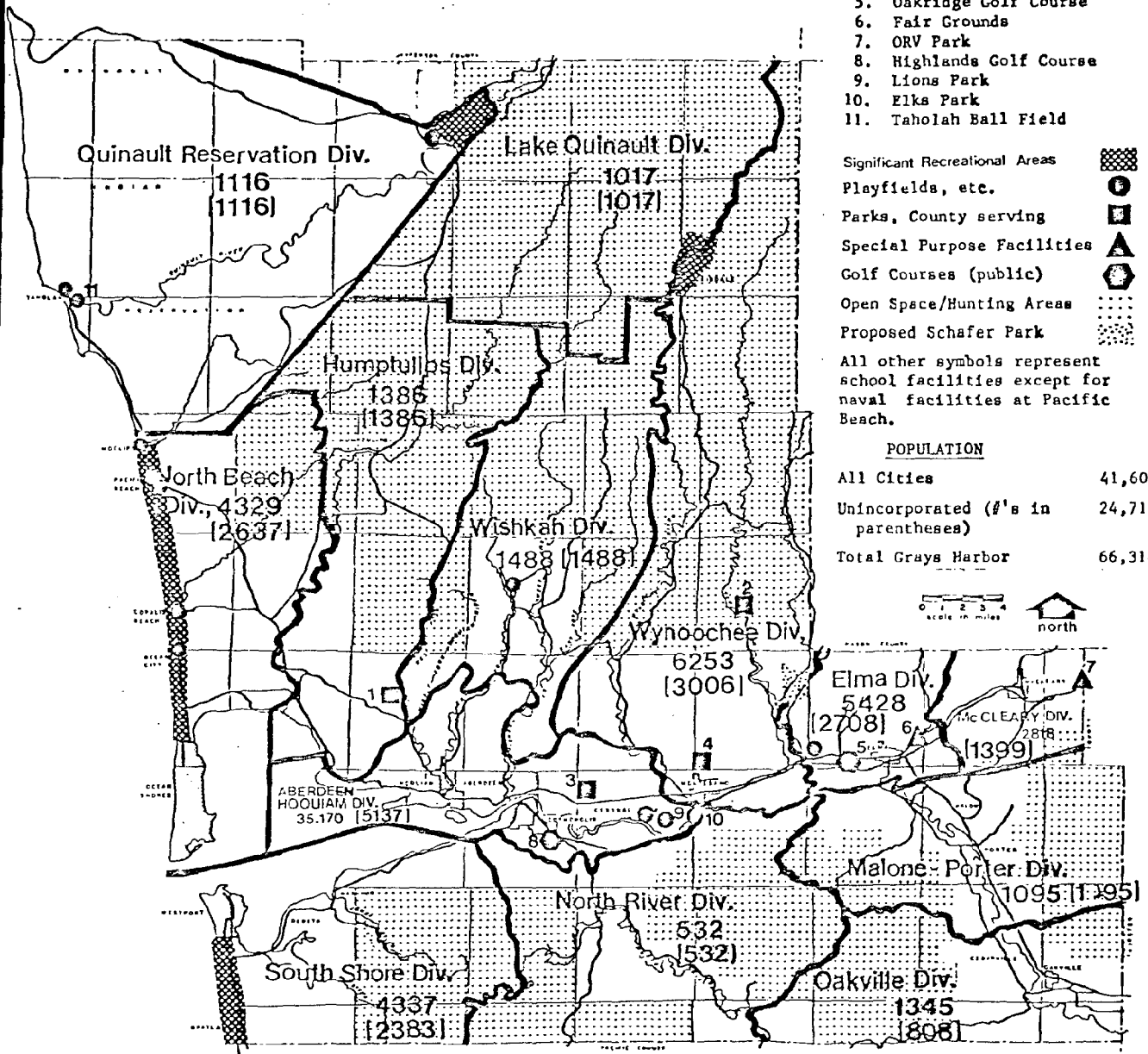
Proposed Schafer Park

All other symbols represent school facilities except for naval facilities at Pacific Beach.

POPULATION

| | |
|-------------------------------------|--------|
| All Cities | 41,602 |
| Unincorporated (#'s in parentheses) | 24,712 |
| Total Grays Harbor | 66,314 |

0 1 2 3 4
Scale in miles



GRAYS HARBOR COUNTY, WASHINGTON
1980 CENSUS DIVISION BOUNDARIES AND POPULATION AND RECREATION FACILITIES

GHRPC: 9/1981

"The preparation of this map was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration, and appropriated for Section 308(c) (1) of the Coastal Zone Management Act of 1972."

Maintenance

While many governmental facilities in eastern Grays Harbor are superbly maintained, the stagnation of government revenues in recent years has resulted in lower overall levels of maintenance. Some systems and facilities are suffering from deferred maintenance. This is most obvious in roads, water, and sewer systems.

Social Services

There are over 200 different agencies in Grays Harbor County which provide various social services. In recent years these agencies have suffered from funding cutbacks and staff and benefit reductions. These cutbacks have occurred in the face of increasing demands due to the downturn in the national, state and local economies. Table 15 summarizes the work load of several major social service agencies serving Grays Harbor County.

Other Governmental Services

The usual range of Federal, State, and local services are available to East County residents. These include access to the Department of Agriculture's programs, e.g: Soil Conservation Service and Farmers Home Administration. In addition, there is a Port District and Public Utility District serving the County.

4.2 Impact of the Proposal on Public Services

The need to ensure that new development could be served as efficiently as possible by existing services is a major reason for the development of this proposal. As such, it is expected that the proposal will result in future lower unit costs for the major public services.

However, in order to achieve this, future development is directed to existing service areas. Consequently, greater expansion of these services would be needed to accommodate the planned development.

Because the proposal will not have any impact on future population or housing levels, the demand for and actual costs of providing governmental services will, in all likelihood, continue to increase, but at a slower rate than if the proposal is not adopted. Growth accommodated by the proposal will increase the demand for fire protection services, sheriff and police services, park and recreational services, maintenance services, social services, other government services, and will increase school enrollments. These increased demands will result in the need for new school facilities, new park and recreational facilities, and new support facilities for the other public services.

4.3 Mitigation of Adverse Impacts on Public Services

The proposal contains policies to encourage growth where public services can be economically provided. Policies specifically requiring the provision of park facilities are also included. Additional mitigation would be accomplished by amending the county platting ordinances to enable the county to require new developments to provide parks and other public service support facilities where needed.

TABLE 15
PERSONS SERVED BY
SOCIAL SERVICE AGENCIES
Grays Harbor County
1977 - 1981

| <u>AGENCY</u> | <u>1977</u> | <u>1978</u> | <u>1979</u> | <u>1980</u> | <u>1981</u> |
|--|-------------|-------------|-------------|-------------|-------------|
| Mental Health | 1,835 | 2,088 | 2,328 | 2,415 | 2,245 |
| Alcohol Program | 1,610 | 2,475 | 2,923 | 2,094 | 1,902 |
| Grays Harbor Health Department Personal Health Services Field Activities | 3,746 | 5,603 | 5,926 | 4,743 | 1,143 |
| Clinic Activities (Service Visits) | --- | 25,829 | 35,346 | 23,483 | 16,701 |
| Environmental Health (Service Visits) | 4,294 | 4,684 | 6,225 | 5,579 | 6,140 |
| Community Action Program (CAP) | 2,971 | 4,858 | 6,304 | 7,535 | 12,569 |
| Department of Social and Health Services Regular AFDC Coverage (Persons per Month) | 2,533 | 2,378 | 2,435 | 2,670 | 2,618 |
| Food Stamps Coverage (Persons per Month) | 4,145 | 3,680 | 4,437 | 5,561 | 5,780 |
| Employment Security Department Regular Unemployment Insurance (Persons Receiving Benefits, June) | 1,465 | 786 | 660 | 1,672 | 2,713 |

SOURCE: Grays Harbor Regional Planning Commission, Monitoring Project of reports of individual agencies.

The data is not strictly comparable over the five year period because of cutbacks in various agencies and programs. For example, the Health Department has spun off a large field program in an attempt to cut costs.

Policies and implementing measures requiring a greater degree of concentration of new development to lessen the costs of providing public services could be adopted. The effectiveness of policies requiring a greater concentration given the demand for rural living and the existing infrastructure is uncertain.

5.1 Existing Energy Usage

The main forms of energy used in Grays Harbor County are wood fuels, petroleum fuels, and electricity. Table 16 displays the estimated energy used by sector for Grays Harbor County.

A BTU (British Thermal Unit) is a unit of energy measurement. A kilowatt-hour contains 3,413 BTUs, a gallon of gasoline 125,000 BTUs, a cubic foot of natural gas 1,030 BTUs, a ton of coal 22,600,000 BTUs.

Petroleum fuels are trucked into the area and are used for transportation, heating, industrial process heating, and numerous other activities.

Wood, perhaps the county's second most used energy source, is obtained from the thousands of acres of forest lands within the region. Wood used for fuel comes from both virgin wood and wood waste. Wood has increased in popularity with residential and industrial users as the price of other fuels has risen. The use of wood for space heating and perhaps industrial process heating will increase in the future as other prices increase.

Electricity is supplied to customers by the County's two electrical utilities: Grays Harbor Public Utility District No. 1 and McCleary Light and Power. The two utilities purchase all their power from the Bonneville Power Administration (B.P.A.) Both utilities are preference customers. BPAs primary sources for electrical power are the hydroelectric facilities sited on various rivers in the region. The Grays Harbor Public Utility District No. 1 also owns approximately four percent of a coal-powered electrical generating station in Centralia; however, at this time it does not need electricity from that source and so sells its share to other utilities.

Between 1974 and 1980 the amount of electrical energy sold within Grays Harbor Public Utility District No. 1 service area increased by 26.1 percent. During the same period McCleary Power and Lights sales increased by 18 percent.

5.2 Anticipated Impact of the Proposal on Energy Use

Given the uncertain future and the limitations of this study it is not possible to forecast the amount of energy the development accommodated by this proposal will require. However the development accommodated by this development will increase demands for wood fuel, petroleum fuels, electricity, and natural gas.

The new development will seek most of the energy it requires from the existing energy providers, although new development particularly new industrial development and new residential development in rural areas will probably generate at least a portion of their own energy supplies.

TABLE 16
Estimated Energy Use By Resource For Each Sector
In Trillions of BTUs
Grays Harbor County
1980

| Energy Resource | Sector | | | | |
|--------------------|-------------|-------------------------|------------|-----------------------------|--------------------------------|
| | Residential | Commercial ^a | Industrial | Transportation ^b | Agriculture ^c TOTAL |
| Electricity | 1.97 | .73 | 1.73 | - | .01 |
| Natural Gas | .14 | .35 | .58 | - | - |
| Petroleum | .43 | (.13) | (4.29) | 3.68 | .10 |
| Coal | .002 | - | - | - | - |
| Wood | 1.17 | - | (6.56) | - | - |
| Total | 3.71 | 1.21 | 13.16 | 3.68 | 21.87 |

Numbers in parentheses are uncertain.

a Includes governmental use of energy.

b Only includes highway gasoline use.

c. Includes farm use of gasoline, diesel, lpg and fuel oil, and electricity use for irrigation.

SOURCE: Office of Applied Energy Studies, Washington State University, Washington State Energy Use Profile 1960-1981. (Olympia: Washington State Energy Office, December 1981.) p. 171.

The land use pattern encouraged by the proposal will conserve transportation energy and, to a lesser extent, residential space heating.

5.3 Potential Mitigation of Adverse Impacts on Energy Use

There are many actions the county can take to lessen energy use in new development, particularly new residential development. These actions include requiring the solar orientation of new building lots, requiring climate to be taken into account in building siting, requiring easements to protect solar access in new developments, tightening up the State energy code which was adopted by the county, undertaking energy planning and continuing to evaluate the feasibility of generating energy from solid waste. The county is planning to undertake an energy conservation study which will include a review of steps that can be taken to reduce energy consumption in new development. This study should partially mitigate the impacts of this proposal.

6.1 Utilities: Existing Conditions

Energy

Electrical energy is provided by the Grays Harbor Public Utility District No.1 and McCleary Light and Power. Much of the east Grays Harbor County electrical distribution system needs to be rebuilt. The PUD is planning on rebuilding the system in 1983. The McCleary power distribution system is also limited, particularly the portion of the system serving the area north of McCleary. The present electrical system serving the area north of McCleary—from the intersection of State Highway 108 and beyond—can handle an additional 160 all electric housing units at peak demand.¹⁰

Other forms of energy are distributed by the usual commercial dealers as part of the northwest distribution system.

Communications

Telephone service in east county is provided by Timberland Telephone Company and Pacific Northwest Bell. Timberland Telephone is interconnected with Pacific Northwest Bell with direct service into the Aberdeen-Hoquiam area. Four newspapers serve the area. They are: The Montesano Vidette, The Elma Chronicle, The Aberdeen Daily World, and The Daily Olympian. Radio service is provided from Aberdeen-Hoquiam and Olympia. Television service is provided by a cable service which carries most of the northwest TV stations and individual antennas in outlying areas.

Water

Water supply was discussed in Section A3.2. Public Water Supplies. There is an adequate water supply available to east county water systems and individual wells in certain areas to accommodate projected population levels.

The water distribution systems will have to be expanded to accommodate projected growth. New individual wells will also have to be constructed.

Sewer

The primary method of sewage disposal in eastern Grays Harbor County is through individual septic tank systems. The sections on soils and groundwater

discussed the areas suitability for on-site waste disposal systems and their present and anticipated future impacts.

East Grays Harbor County is also served by three sewer systems. The Montesano sewage treatment plant is operating near capacity and does not meet water quality standards. The City of Montesano is currently exploring ways to improve the sewage treatment plant. One of the reasons the plant is operating at capacity is because of a serious infiltration problem with the collection pipes. The pipes leak and during wet periods rainwater infiltrates into the pipes and overloads the sewage treatment plant. Montesano is in the process of sealing the collection pipes to reduce this problem. The City of Montesano currently provides sewer services to areas outside the city. If the sewage system problems can be cured, Montesano plans to expand sewer service throughout its designated urban service areas.

The City of Elma sewerage treatment plant also does not meet water quality standards. The plant is relatively new and was designed to meet the standards, but the plant does not. Like Montesano, the City of Elma is working to correct the plant's problems. Some collection lines also require rebuilding. The city is working on this problem. Elma currently serves a few users outside the city and plans to expand the area served by the sewer on a demand basis.

The Town of McCleary has a brand new sewer plant and collection system. The McCleary plant serves an area to the west of the city. The Town Comprehensive Plan calls for expanding sewer service into its designated urban service areas after the city is adequately served.

Stormwater

There is a county wide drainage district, although the district has not yet been activated in east Grays Harbor County.

Solid Waste

Solid wastes from east county are disposed of in the LeMay Landfill in Central Park and the Hoquiam Municipal Landfill. Within the built up areas solid waste is collected by one of several collection companies and hauled to either one of the two landfills or a transfer station operated by Grays Harbor County. In the outlying areas individual households dispose of their own solid wastes, most bring their solid waste to a county operated transfer station from where it is trucked by the county to the Hoquiam Municipal Landfill. Although the county transfer stations have reduced the problem, illegal dumps continue to be a problem in unincorporated east Grays Harbor County.

The existing landfills have a limited useful life and Grays Harbor County, in conjunction with the cities and towns within the county are developing a revised solid waste plan to address this problem. One alternative to be explored by the study is generating power from solid wastes.

There is a recycling center in Aberdeen that recycles glass, aluminum, and paper. The Lions Clubs in Elma and Montesano also collect newspapers.

Industrial waste (in East County these are mainly the wastes from shake and sawmills) is disposed of through landfill or burning. Wood waste fills are a serious hazard in east Grays Harbor County¹⁰. Leachate from the fills have the potential to contaminate both surface and groundwater. The use of wood as fuel has the potential to lessen this problem's future potential.

6.2 Anticipated Impact on Utilities

The impact of the proposal on utilities is largely the same as its impact on public services. The proposal will reduce the need to extend public utilities to new areas to support new development. The cost of doing this will be to require expansion of the utility facilities within the urban services areas of the county.

The growth accommodated by the proposal will require expansion and reconstruction of the electrical distribution system in east county, expansion of the communication system, some expansion of the water systems, repair of the Montesano and Elma sewerage treatment plants and expansion of the sewer collection system, and a new solid waste disposal site (either a landfill, power generation facility or some other alternative.) As was noted in the discussion of the existing utility systems some of these improvements are underway or planned. These new and expanded utilities would also be required under the existing comprehensive plan and zoning ordinance because the proposal will not change the anticipated future population. Activation of the drainage district would be one way of maintaining a drainage system that would lessen the adverse impacts of the stormwater runoff increases generated by the development accommodated by the proposal.

6.3 Potential Mitigation of Adverse Impacts on Utilities

This proposal incorporates the previously adopted plans of the affected cities and towns which provide for expanding their water and sewer utilities to accommodate the policies of this proposal. Increasing the level of services within these "serviceable" areas is a less costly alternative to serving other areas to adequately accommodate new development.

Measures could be added in the county platting ordinances to ensure the utilities necessary to accommodate new development can be provided on an equitable basis. Agreements between utility providers and new developments could be encouraged to ensure adequate funds are available to make the required improvements.

Again, because the proposal will not affect the overall population level, but will encourage a land use pattern which is easier to serve with public facilities, the net affect will be to lower the overall costs of development.

7.1 Existing Human Health Conditions (Including Mental Health)

While they reside in a generally healthy environment, the residents of Grays Harbor have some serious health problems. The following tables summarize the available health indicators. Grays Harbor County apparently has high rates of heart disease, cancer, cerebrovascular disease, influenza and pneu-

TABLE 17
Mortality by Cause of Death
Grays Harbor County
1975 - 1980

| Description | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence | By Place of Residence |
| Mortality | | | | | | | | | | | | |
| Total Number | 679 | 650 | 623 | 622 | 595 | 662 | | | | | | |
| Grays Harbor Rate | 11.3 | 10.7 | 10.1 | 10.0 | 9.3 | 10.0 | | | | | | |
| State Rate | 8.5 | 8.5 | 8.1 | 8.1 | 7.8 | 7.8 | | | | | | |
| Total Deaths by Suicide | 9 | 13 | 8 | 9 | 10 | 6 | | | | | | |
| Grays Harbor Rate | 15.0 | 21.5 | 13.0 | 14.4 | 15.7 | 9.0 | | | | | | |
| State Rate | 15.1 | 15.5 | 14.6 | 14.4 | 14.2 | 13.5 | | | | | | |
| Total Deaths by Alcoholism | 3 | 2 | 3 | 2 | 1 | 2 | | | | | | |
| Grays Harbor Rate | 5.0 | 3.3 | 4.9 | 3.2 | 1.6 | 3.0 | | | | | | |
| State Rate | 2.9 | 2.6 | 1.9 | 2.2 | 2.0 | 2.3 | | | | | | |
| Total Deaths by Cirrhosis of the Liver | 10 | 13 | 7 | 13 | 6 | 9 | | | | | | |
| Grays Harbor Rate | 16.6 | 21.5 | 11.4 | 20.9 | 9.4 | 13.6 | | | | | | |
| State Rate | 16.3 | 14.5 | 14.4 | 12.7 | 12.3 | 11.7 | | | | | | |
| Total Deaths by Homicide | 2 | 1 | 2 | 5 | 0 | 4 | | | | | | |
| Grays Harbor Rate | 3.3 | 1.6 | 3.3 | 8.0 | - | 6.0 | | | | | | |
| State Rate | 6.2 | 5.0 | 4.5 | 5.2 | 5.2 | 5.4 | | | | | | |

SOURCE: Vital Statistics 1975-1980, Department of Social and Health Services, (State of Washington: March 1977, May 1978, November 1978, December 1979, April 1981, and July 1982.)

EXPLANATION: Mortality and all other rates are per 100,000 population, - unavailable/not applicable.

TABLE 18
MORTALITY RATES/100,000 FOR FIVE LEADING CAUSES OF DEATH,
GRAYS HARBOR COUNTY AND COMPARISONS
1978

| COUNTY | DISEASES OF THE HEART | MALIGNANT NEOPLASMS | CEREBRO- VASCULAR DISEASE | ALL ACCIDENTS | INFLUENZA AND PNEUMONIA |
|------------------------------|-----------------------------|------------------------|---------------------------------|------------------|-------------------------------|
| Grays Harbor County | 369.2 | 215.1 | 99.5 | 65.8 | 32.1 |
| Pacific County | 401.2 | 290.1 | 290.9 | 166.7 | 18.5 |
| Lewis/Mason/Thurston | 324.8 | 187.2 | 88.7 | 64.7 | 25.6 |
| Cowlitz/Wahkiakum | 283.0 | 177.8 | 99.2 | 56.8 | 29.0 |
| Clark/Skamania/ Klickitat | 261.9 | 149.1 | 70.9 | 47.2 | 20.5 |
| Washington State | 286.2 | 171.4 | 79.4 | 54.5 | 27.5 |

SOURCES: Vital Statistics 1978, Washington State Department of Social and Health Services, 1978.

Health Systems Plan, Southwest Washington Health Systems Agency, 1980-81.

monia, accidents, and alcoholism than the state as a whole and other comparable areas. These diseases are thought to be related to the age of the county population and the county's relatively dangerous industrial occupations.

While a small hospital is located in eastern Grays Harbor County at McCleary, much of the needed medical and mental health related services are also provided to East County from the Aberdeen-Hoquiam area and the Olympia area. Major hospitals serving East County are Community and St. Joseph's Hospitals in Aberdeen and St. Peter's Hospital in Olympia. Private individual medical offices are few in East County, though the situation has improved over the past several years.

7.2 Anticipated Impact of the Proposal on Human Health

The relationship of the proposal to human health is largely indirect and positive by maintaining a higher quality environment. However, some more direct implications are also present, for example, by separating residential development from farm operations, the proposal helps protect residents from noxious farm pests and weed sprays thereby protecting human health.

8.2 Existing Aesthetics

East Grays Harbor County offers a unique combination of hills, valleys, and rivers, all in a largely rural setting dominated by agricultural uses and forested open space. There are numerous opportunities for viewing bucolic scenes throughout the area. This, combined with miles of riverine shorelines, the pleasing rural landscape of large farmhouses, old barns, crops and cattle, rate the area as a very desirable place to visit and to live.

8.2 Anticipated Impact on Aesthetics

The proposed policies would zone large portions of eastern Grays Harbor County for low density rural uses thereby preserving large areas of open space. The proposed Rural Residential and Rural Development zoning classifications applied to areas outside urban and built up areas, will also lend a continuity to the landscape which more intensive development could conceivably disrupt. The proposal would also permit conversion of scenic rural visits to residential, commercial, and industrial areas.

8.3 Potential Mitigation of Adverse Impacts on Aesthetics

Areas of high aesthetic value could be inventoried and policies adopted to protect these areas. Such policies would be difficult to implement and may not be enforceable without compensating owners. This would probably not be feasible.

Improved design standards for new developments could reduce the impact of the proposal on aesthetics.

9.0 Recreation

Recreation areas are discussed under Subsection 7.B.4.1 Public Services, Parks and Recreation.

10.1 Existing Archeological/Historical Conditions

There are three properties in Grays Harbor County on the National Register of Historic Places, two are outside the affected area and one is located in Oakville and used as a bank. However, according to information from the Satsop EIS, there are at least five archeological sites located in East County and these contain Indian artifacts. The old farmsteads and pioneer houses that still remain in East County add a historical air to the East County setting.

10.2 Anticipated Impact on Archeological/Historical Resources

The proposal should have no impact on the bank in Oakville listed on the National Register of Historic Places.

In the course of land development, farming, or silvacultural activities, historical or archeological resources could be disturbed or destroyed.

10.3 Potential Mitigation of Adverse Impacts on Archeological/Historical Resources

Projects which require environmental assessment, particularly if they are of a large scale, should be mindful of the fact that artifacts could be discovered during the construction phase. Where artifacts are uncovered, their value should be determined before work which would degrade or destroy them is allowed to continue. A list of all buildings and structures which may have historical significance should be kept for local government reference. Such a list could be used to identify sites which could be affected by development. The zoning proposal will not have any significant effect on archeological or historical resources, except that as the urban service areas fill in, care should be taken to preserve unique and/or important cultural artifacts.

The Rural Lands proposals contain a policy calling for the protection of sites of exceptional historic or archeological values. Implementation of this policy would mitigate some of the impacts of this proposal.

11. Age, Sex, and Ethnic Characteristics of the Residents Affected by the Proposal

Tables 20 through 22 display the age, sex, and ethnic characteristics of the population within the areas to be affected by the proposal. The proposal will affect all of eastern Grays Harbor County and the tables include all the persons residing within the area. As far as age, sex, and ethnic characteristics are concerned, the population of east county is very similar to the population of the entire county.

TABLE 19
AGE-ADJUSTED CANCER INCIDENCE RATES/100,000
FOR SELECTED WASHINGTON COUNTIES
1974 - 1975

| COUNTY | MALES | FEMALES | POPULATION |
|--------------|-------|---------|------------|
| Grays Harbor | 414.5 | 335.8 | 370.3 |
| Thurston | 419.6 | 321.0 | 368.1 |
| King | 396.9 | 328.4 | 348.8 |
| Kitsap | 363.0 | 324.9 | 337.3 |
| Pierce | 376.4 | 335.5 | 344.9 |
| Snohomish | 354.0 | 298.2 | 320.7 |
| CSS *TOTAL | 387.7 | 325.6 | 345.7 |
| NATIONAL | 346.7 | 270.2 | 300.0 |

*Total for the Fred Hutchinson Washington State Cancer Surveillance System.

SOURCE: Health Systems Plan, Southwest Washington Health Systems Agency, 1980-1981.

TABLE 20
AGE DISTRIBUTION OF RESIDENTS
EASTERN GRAYS HARBOR COUNTY
and
GRAYS HARBOR COUNTY
(Includes both Incorporated and Unincorporated areas)
1980

| <u>Age Group</u> | <u>East County</u> | | <u>Grays Harbor County</u> | |
|-------------------|--------------------|----------------|----------------------------|----------------|
| | <u>Number</u> | <u>Percent</u> | <u>Number</u> | <u>Percent</u> |
| Under 5 years | 1,488 | 8.5 | 5,252 | 7.9 |
| 5 to 17 years | 3,878 | 22.2 | 13,716 | 20.7 |
| 18 to 64 years | 9,987 | 57.2 | 38,950 | 58.7 |
| 65 years and over | 2,118 | 12.1 | 8,396 | 12.7 |
| Total | 17,471 | 100.0 | 66,314 | 100.0 |

SOURCE: U.S. Department of Commerce, Bureau of the Census: 1980 Census of Population.

TABLE 21
DISTRIBUTION OF PERSONS BY SEX
EASTERN GRAYS HARBOR COUNTY
and
GRAYS HARBOR COUNTY
1980

| | <u>East County</u> | | <u>Grays Harbor County</u> | |
|---------------|--------------------|----------------|----------------------------|----------------|
| | <u>Number</u> | <u>Percent</u> | <u>Number</u> | <u>Percent</u> |
| Male | 8,724 | 49.9 | 33,102 | 49.9 |
| <u>Female</u> | <u>8,747</u> | <u>50.1</u> | <u>33,212</u> | <u>50.1</u> |
| Total | 17,471 | 100.0 | 66,314 | 100.0 |

SOURCE: U.S. Department of Commerce, Bureau of the Census:
1980 Census of Population.

TABLE 22
RACE AND ETHNIC DISTRIBUTION OF RESIDENTS
EASTERN GRAYS HARBOR COUNTY
and
GRAYS HARBOR COUNTY
(Includes both Incorporated and Unincorporated Areas)
1980

| | <u>East County</u> | | <u>Grays Harbor County</u> | |
|-----------------|--------------------|----------------|----------------------------|----------------|
| | <u>Number</u> | <u>Percent</u> | <u>Number</u> | <u>Percent</u> |
| White | 16,757 | 95.5 | 62,575 | 94.4 |
| American Indian | 388 | 2.2 | 2,293 | 3.5 |
| Hispanic | 191 | 1.1 | 757 | 1.1 |
| Black | 0 | 0 | 77 | 0.1 |
| Asian | 54 | 0.3 | 465 | 0.7 |
| <u>Other</u> | <u>81</u> | <u>0.5</u> | <u>147</u> | <u>0.2</u> |
| Total | 17,471 | 100.0 | 66,314 | 100.0 |

SOURCE: U.S. Department of Commerce, Bureau of the Census:
1980 Census of Population.

Despite the fact that east county has a lower concentration of American Indians than the county as a whole (2.2 and 3.4 percent respectively), the area to be affected by the proposal includes the Chehalis Indian Reservation.

12.1 The County Economy

The Grays Harbor County economy is based on the natural resources of the area. The four basic sectors of the county economy are forest products, tourism, fisheries, and agriculture. These sectors earn most of the income upon which the remaining sectors of the economy depend; trade, services, government, etc. To these basic sectors has been added the construction industry which is constructing the Satsop twin nuclear generating plant near the City of Elma in eastern Grays Harbor County.

Historically, the construction industry has not been a great influence on Grays Harbor's economy. The industry has been highly cyclical, both in terms of seasonality and from year to year. The industry could vary as much as 100% from one season to another, ranging from less than 600 workers to nearly 1,200 workers.

However, with the advent of the Satsop Nuclear Power Plant Construction Project, the character of this sector changed dramatically. Employment on this project increased to over 5,000 in 1981. At the peak of construction of the Satsop Project, employment in construction will rival that of the forest products industry. Since construction wages tend to be higher than those of forest products, this sector will be even larger than forest products as measured by payrolls.

While the employment level of this project will rival that of the forest products industry, the actual impact of the project will be much less. Most of the workers on the project will not be residents of the county and, hence, will contribute only a little to the basic income of this county. Most of the basic income to the county from this project will, instead, come from people who reside here and work on it. Most important are new in-migrants to the county who will, in effect, add completely new basic income. Estimates of the proportion of workers who will be in-migrants are difficult to derive. Currently, from a variety of sources, the Grays Harbor Regional Planning Commission is estimating that between 15 and 20% of the workers on this project, at any given time, will be new in-migrants to the county. At the peak of construction in 1987, then, it may be estimated that there will be between 750 to 1,000 workers who will have in-migrated to the county for employment. This would make construction comparable to the pulp and paper sector in terms of its importance to the regional economy. However, the importance of this project to Grays Harbor County will decline rapidly after completion of the plant, estimated now to be in 1987.

While most of Grays Harbor's economy is dependent upon forest products, agriculture, tourism, and fisheries, there are other aspects of the economy which should be considered. While manufacturing is dominated by the forest products industry, there are other manufacturing activities which are becoming increasingly important. In recent years a modern chemical plant has started in the Elma area and employs in excess of 50 people. This plant is now a significant aspect of the economic base of the eastern portion of the county. A long established firm, Lamb-Grays Harbor, is noted as an important manufacturer

TABLE 23
LABOR FORCE AND UNEMPLOYMENT

| | Annual Average Labor Force In Grays Harbor County | Percent of State Labor Force | Grays Harbor County Percent Labor Force Unemployed | Percent of State Labor Force Unemployed | Percent of National Labor Force Unemployed |
|------|--|------------------------------------|---|--|---|
| 1970 | 24,370 | 1.73% | 11.5% | 9.1% | 4.9% |
| 1971 | 24,640 | 1.76% | 9.8% | 10.1% | 5.9% |
| 1972 | 25,180 | 1.77% | 9.4% | 9.5% | 5.6% |
| 1973 | 26,150 | 1.79% | 8.9% | 7.9% | 4.9% |
| 1974 | 25,730 | 1.71% | 8.9% | 7.2% | 5.6% |
| 1975 | 24,770 | 1.62% | 12.4% | 9.5% | 8.5% |
| 1976 | 26,249 | 1.66% | 8.0% | 8.6% | 7.7% |
| 1977 | 27,540 | 1.68% | 9.6% | 8.8% | 7.0% |
| 1978 | 29,030 | 1.64% | 8.0% | 6.8% | 6.0% |
| 1979 | 32,020 | 1.69% | 8.7% | 6.8% | 5.8% |
| 1980 | 31,610 | 1.65% | 10.9% | 7.7% | 7.1% |
| 1981 | 33,987 | 1.76% | 13.9% | 9.2% | 7.4% ¹ |

¹Through May.

SOURCE: Washington State Employment Security Department.

TABLE 24
PER CAPITA INCOME BY PLACE OF RESIDENCE
1970 to 1979

| 1970 | | | 1979 | | |
|-----------------|---------------------|-----------------|-----------------|---------------------|-----------------|
| Grays Harbor | Washington State | Index County | Grays Harbor | Washington State | Index County |
| \$3,593 | \$4.053 | .89 | \$9,127 | \$9,531 | .96 |

SOURCE: U.S. Department of Commerce.

of machinery. This company has a large plant in Hoquiam and is a significant part of that community's economic base. In addition, a new vanillin plant has recently opened in Hoquiam. This product, used for making vanilla, is a by-product of pulp and paper processing. And, the City of Aberdeen is rated 3A, a "Significant Local Business Center" by the Rand McNally's highly respected Commercial Atlas and Marketing Guide. The opening of a major regional shopping mall and one smaller shopping mall within the past several years in Aberdeen will continue to make this the commercial, retail center for Grays Harbor County.

Grays Harbor County has a lower average family income than the state as a whole although the county's average family income has increased considerably since 1970. The county also has a higher proportion of poor and near-poor residents than the state average. Grays Harbor County had a higher percent of its population receiving food stamps, 8.9%, compared to the state, 6.9% in 1980.

12.2 Anticipated Impact of the Proposal on the County Economy

The proposal will impact the County's resource based economy by permitting the conversion of 300 acres of activity farmed land, the conversion of forest lands and the degradation of salmon spawning streams. The proposal should however, reduce pressure to convert additional agricultural lands to new agricultural uses by providing increased areas available for urban, suburban, and rural uses. The combination of the one acre minimum lot size zones applied to easily developable areas together with the five acre minimum lot size zone applied to most of the forest lands will lessen the pressure to convert forest lands to other uses. If the drainage policy of the proposal is fully implemented, the impact of the development accommodated by the proposal on salmon spawning streams will be reduced. On balance, the proposal will probably protect farmland, forest lands, and salmon spawning streams better than the county's existing plan and zones.

Adoption of two new one acre zones may make the county more attractive to rural residential development, thereby having a positive impact on the construction, real estate, service and, to a lesser extent, commercial sectors.

12.3 Potential Measures to Mitigate the Impacts the Proposal on the County Economy

The county could adopt policies preventing the conversion of all agricultural land, including land within urban service areas, to other uses. These policies would increase public service costs, inefficiently utilize land, and probably would not be successful. It is probably that they also could not be adopted.

Grays Harbor County could adopt policies and implementing measures reviewing road design and construction and regulating land clearing. These provisions would reduce the impact of development on salmon spawning streams even more than the proposal.

7. THE RELATIONSHIP BETWEEN SHORT TERM USES OF THE ENVIRONMENT AND THE
MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

A. The Identification of Trade-offs between Short-Term Gains and Long-
Term Losses

The Rural Lands Recommendations, like many comprehensive plan proposals, seek to enhance the long term productivity of an area. In a community like Grays Harbor County this means not only ensuring that the resources upon which the local economy is based are protected, but that adequate areas are available for housing, commerce, recreation, and industry. The proposal seeks to provide long term gains by directing growth away from areas of high resource values and towards areas capable of sustaining development over the long term. The densities of the plan designations and zones applied to the various areas are designed to ensure that the development permitted will be productive over the long term.

The trade-off for these long term benefits is that development activities will be directed to designated areas. New development will also have to conform to certain standards.

This is not to say, that the proposal involves only long term benefits. There will also be some short term gains that will lessen long term productivity. Some new developments will be permitted in areas served by inadequate roads, this has the potential to lessen the long term stability of those areas. Certain development practices, such as excessive clearing and grading, will tend to silt up salmon spawning beds reducing the long term productivity of the streams. New developments will probably be permitted in areas where public facilities are not adequate, which again has the potential to lessen the long term stability and productivity of those communities. The county will probably take steps to mitigate these and similar problems, but short term gains at the expense of long term productivity will no doubt occur.

But, again, the thrust of the Rural Lands Recommendations are to enhance the long term productivity of the county. If adequately implemented, this objective should be substantially achieved.

B. Benefits and Disadvantages of Reserving Implementation to a Future Time

The area's forests, farmlands, and other natural resource areas are under development pressure and foregoing adoption of the proposal would continue problems already being experienced, that is, decisionmakers would continue to have few policy guidelines to follow in deciding issues that affect the development of rural lands, and inappropriate development would continue in certain areas.

8. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

As noted above the major irreversible and irretrievable commitments of resources consist of:

- A. The commitment of 30,000 acres of land previously zoned agricultural by the 1969 zoning ordinance and not included in the agricultural zones adopted in 1981 to other rural uses.
- B. The general comitment to a land use pattern which also involves the foreclosing of opportunity to employ these areas for other uses.

9. ALTERNATIVES TO THE PROPOSAL

During the development of the Rural Lands Recommendations several alternative means of achieving the project objectives were considered. These alternatives included a variety of differing policies and zoning provisions. This section will analyze the impacts of several alternatives to the Rural Lands Recommendations. Like most policy proposals, the Rural Lands Recommendations have a nearly infinite variety of potential alternatives. Some of these alternatives may vary little, for example, the addition or deletion of one or two policies. Other alternatives vary greatly, for example, a performance zoning proposal or no zoning. In writing this Draft EIS seven alternatives have been developed to represent the range of potential alternatives. Not all of these alternatives achieve the study's objectives equally well, in fact some would not achieve certain objectives. The impacts of the alternatives also vary greatly.

The alternatives to the Rural Lands Recommendations will be described, their major environmental effects will be noted, their performance in achieving the study objectives will be compared, and their relative environmental impacts will be summarized. These last two functions will be carried out through the use of two summary charts. Table 25 compares the success each alternative would have in achieving the study objectives. Table 26 summarizes the environmental impacts of the proposal.

ALTERNATIVE A: PROPOSED RURAL LANDS RECOMMENDATIONS

The proposed recommendations are described and their major environmental impacts noted in other sections of the Draft EIS.

ALTERNATIVE B: PARTIAL ADOPTION OF THE RECOMMENDATIONS

B.1 Description

This alternative proposes that only the three zones (the Rural Residential 1 District, the General Development 1 District, and the General Development 5 District) together with the proposed plan map, the two goals, and Policy 2 be adopted. The other Rural Lands Recommendations would be dropped. This alternative would apply the zones to the same areas as the Rural Lands Recommendations. The plan map and Policy 2 would provide the legally required plan for the new districts.

B.2 Major Adverse Environmental Impacts

The proposed policies this alternative deletes have four major purposes: to guide major commercial developments; to guide resource based industrial development; to mitigate the potential adverse impacts of the Rural Lands policies and zones; and to coordinate the County's land use plans and regulations with the plans and regulations of other jurisdictions. This alternative would have none of these benefits. The major adverse environmental effects include:

- The potential for an increase in the diversion of surface water in small creeks and streams within developing areas.

TABLE 25

SUMMARY OF SUCCESS OF ACHIEVING PROJECT OBJECTIVES
PROPOSED RURAL LANDS RECOMMENDATIONS AND ALTERNATIVES

| STUDY OBJECTIVES | A PROPOSED RURAL LANDS RECOMMENDATIONS | B PARTIAL ADOPTION OF RECOMMENDATIONS | C RECOMMENDATION WITH CD-II POLICY & ZONE | D LESS RESTRICTIVE POLICIES & ZONES | E MORE RESTRICTIVE POLICIES & ZONES | F NO ACTION EXISTING PLAN AND ZONES RETAINED | G NO PLAN NO ZONES | H PERFORMANCE ZONING AND PLANS | COMMENTS |
|--|---|--|--|--|--|---|-----------------------|-----------------------------------|---|
| 1. To provide areas for small acreage residential development | Good | Good | Good | High | Low | Low | High | Low | D and G would permit development in unsuitable areas. |
| 2. To protect the productivity & character of Rural Lands | Good | Moderate | Good/High | Moderate | High | Low | No | High | |
| 3. To determine appropriate uses for "Old Agricultural" areas* | High | Good | High | Good | Good/High | No | No | Low | Performance zoning does not readily identify suitable uses. |
| 4. To provide guidance to county policymakers and citizens | High | Low | High | Good | High | Low | No | High** | **Only on a case-by-case basis. |
| 5. To coordinate east county land use plans | High | No | High | Moderate | High | No | No | Moderate | |

| Key Word | Relative Degree of Objective Achievement |
|----------|--|
| High | Highest Relative Objective Achievement |
| Good | Degree of Achievement |
| Moderate | Decreasing |
| Low | |
| No | Would Not Achieve Objective Even in Part |

*The "Old Agricultural" areas are those lands that were zoned agricultural under the 1969 Zoning Ordinance and not included in the new agricultural zones adopted in 1981.

TABLE 26: COMPARISON OF ENVIRONMENTAL IMPACTS FOR

Page 1 of 2

RURAL LANDS STUDY ALTERNATIVES

| ELEMENTS OF THE ENVIRONMENT | PHYSICAL ENVIRONMENT | | | | | | | | COMMENTS |
|--|--|---|--|--------------------------------------|--------------------------------------|--|-------------------------------|--------------------------|---|
| | A | B | C | D | E | F | G | H | |
| | PROPOSED RURAL LANDS RECOMMENDATIONS | PARTIAL ADOPTION OF RECOMMENDATIONS | PROPOSED RECOMMENDATIONS WITH GD-II POLICY | LESS RESTRICTIVE POLICIES & ZONES | MORE RESTRICTIVE POLICIES & ZONES | NO ACTION EXISTING PLAN RETAINED | NO PLAN, NO ZONES | PERFORMANCE ZONING | |
| All alternatives have potential to increase fugitive dust from gravel roads. | | | | | | | | | |
| Earth | | | | | | | | | |
| Soils | Increased disturbance * | Same* | Same* | Same* Potential land movement. | Same* | Greater distur- bance* | Same as D* | Same* | *Caused by road and building construction. |
| Protection of Unique Features | 7 | 6 | 7 | 4 | 9 | 3 | 1 | 9 | Relative level of protection |
| Reduces Potential for Erosion | 8* | 5 | 8* | 4 | 9 | 2 | 1 | 8* | Relative potential to lessen erosion. *Caused by road and building construction. |
| Air Quality | All alternatives have potential to increase fugitive dust from gravel roads. | | | | | | | | |
| Water | | | | | | | | | |
| Runoff | (m) | Increase | (m) | Increase (mp) | No increase | Increase | Increase | (m) | |
| Floods | | | | | | | May increase flood damages. | | |
| Water Quality | | | | | | | | | |
| Surface | Minor quality reduction (m) | Reduce quality | Same as A | Same as B | Same as B | Same as B | Reduce quality. | | |
| Groundwater | Localized pollution risk/(m) | Greater localized pollution risk | Same as A | Same as B | Minor risk | Same as B | High localized pollution risk | | Groundwater pollution risk results from septic systems in marginal and in some alternatives poor quality soils. |
| Public Water Supplies | | | Potential for pollution | Potential for pollution | | Potential for pollution | Probability of pollution | | |
| Flora/Fauna | | | | | | | | | |
| Number | On site decrease | Same | Same | Same | Same | Same | Area wide decrease | Same | |
| Unique Species | 7 | 5 | 7 | 5 | 8 | 3 | 1 | 8 | Relative rating of protection to unique habitats. Difficult to evaluate, amount of unique habitat unknown. |
| Fish Habitat | Minor degradation | Increase in potential degradation | Same as A | Same as B | Better protection | Same as B | Greater increase than B | Better protection | |
| Noise, Light, and Glare | Local increase (m) | Same | Same | Local increase | Same | Significant increase | Largest increase | Minor local increase (m) | |
| Land Use | | | | | | | | | |
| Interjurisdictional Coordination | Yes | No | Yes | Not as well as A | Yes | Yes, but adopted policies not consistent | No | Not as well as A | |
| Conversion of Economically Productive Areas | 7 | 6 | 7 | 5 | 9 | 3 | 1 | 6 | Relative protection from conversion of economically productive forest and farm lands. |

TABLE 26: COMPARISON OF ENVIRONMENTAL IMPACTS FOR

Page 2 of 2

RURAL LANDS STUDY ALTERNATIVES

| ELEMENT OF THE ENVIRONMENT | A | | B | | C | | D | | E | | F | | G | | H | | COMMENTS |
|--|---|-------------------------------------|--------------------------------------|---|--|--|---|--------------------------------------|---|--------------------------------------|--------------------------------------|--------------------------------------|---|-----------------------------------|-----------------------------------|--------------------------------------|---|
| | PROPOSED RURAL LANDS RECOMMENDATIONS | PARTIAL ADOPTION OF RECOMMENDATIONS | PROPOSED RURAL LANDS RECOMMENDATIONS | LESS RESTRICTIVE POLICIES & ZONES | LESS RESTRICTIVE POLICIES & ZONES | NO ACTION EXISTING NO PLAN, NO ZONES | PERFORMANCE ZONING | PROPOSED RURAL LANDS RECOMMENDATIONS | LESS RESTRICTIVE POLICIES & ZONES | LESS RESTRICTIVE POLICIES & ZONES | NO ACTION EXISTING NO PLAN, NO ZONES | PERFORMANCE ZONING | PROPOSED RURAL LANDS RECOMMENDATIONS | LESS RESTRICTIVE POLICIES & ZONES | LESS RESTRICTIVE POLICIES & ZONES | NO ACTION EXISTING NO PLAN, NO ZONES | |
| Land Use continued Conflicts | 8 | 3 | 8 | 4 | 9 | 1 | 8 | 4 | 9 | 3 | 1 | 8 | 4 | 9 | 1 | 8 | Relative potential to lessen the number and intensity of land use conflicts. |
| Natural Resources | | | | | | | | | | | | | | | | | |
| Rate of Use | Land, construction materials | Same as A | Less effective land use | Same as A | Less effective land use | Same as D | Same as A | Less effective land use | Same as A | Less effective land use | Same as D | Same as A | Less effective land use | Same as A | Less effective land use | Same as A | None of the alternatives are expected to effect overall population levels. |
| Population | Change distribution of growth | Same | Same | Same | Change to a greater degree. | Less change in distribution. | No change | Same as E | Increase | Less effective land use | Same as A | Same as A | Less effective land use | Same as A | Less effective land use | Same as A | Increase in housing choice results from an increase in potential locations for housing available. |
| Housing | Change distribution of growth. Increase choice. | Same | Same | Less change. Greater choice. | More change/less increase in choice. | Less change/less increase in choice. | Largest increase in choice. Decline over long term. | Same as E | Increase in housing choice results from an increase in potential locations for housing available. | Less change/less increase in choice. | Less change/less increase in choice. | Less change/less increase in choice. | Largest increase in choice. Decline over long term. | Same as E | Same as E | Same as E | Increase in housing choice results from an increase in potential locations for housing available. |
| Transportation/Circulation | | | | | | | | | | | | | | | | | |
| Trips Generated | Increase in urban, suburban & rural areas (m) | Same | Same | Less increase in towns; greater increase in suburban rural. | Greater increase in towns, suburban areas; lesser increase in rural (m). | Least increase in town, increase in suburban, largest increase in rural areas. | Increase in towns, suburban, lower to be about the same for all alternatives. | 4 | Relative level of accessibility. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Relative level of accessibility. |
| Transit Accessibility | 7 | 7 | 5 | 8 | 4 | 2 | 4 | 2 | 4 | 1 | 8 (m) | 8 (m) | 1 | 8 (m) | 8 (m) | 8 (m) | Relative level of accessibility. |
| Traffic Hazards | 6 (m) | 6 (m) | 5 (m) | 8 (m) | 4 | 1 | 8 (m) | 1 | 8 (m) | 1 | 8 (m) | 8 (m) | 1 | 8 (m) | 8 (m) | 8 (m) | Relative level of accessibility. |
| Public Services Demand | Moderate Increase Same | Same | Increase greater than A. | Less increase. Same as A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Greater increase than A. | Relative level of accessibility. |
| Utilities Demand | Moderate Increase Same as A | Same as A | Increase greater than A. | Same as A | Same as A | Same as A | Same as A | Same as A | Same as A | Same as A | Same as A | Same as A | Same as A | Same as A | Same as A | Same as A | Relative level of accessibility. |
| Aesthetics | | | | | | | | | | | | | | | | | |
| Development of Open Areas | Moderate | Moderate | High | Low | Moderate, more scattered. | High | Moderate, more scattered. | High | Moderate, more scattered. | Moderate, more scattered. | Moderate, more scattered. | Moderate, more scattered. | Moderate, more scattered. | Moderate, more scattered. | Moderate, more scattered. | Moderate, more scattered. | Relative level of accessibility. |
| Recreation | Increased (m) | Increased | Same | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Minor increase | Relative level of accessibility. |
| Archaeological/Historical | 7 | 6 | 5 | 9 | 2 | 8 | 9 | 2 | 8 | 8 | 9 | 2 | 8 | 9 | 2 | 8 | Relative level of accessibility. |
| Economic Impact | 7 | 6 | 6 | 8 | 4 | 3 | 7 | 4 | 3 | 7 | 4 | 3 | 7 | 4 | 3 | 7 | Relative level of accessibility. |
| KEY TO COMPARISON SYMBOLS: | | | | | | | | | | | | | | | | | |
| Same = Same input than alternative A. | | | | | | | | | | | | | | | | | |
| Greater = Greater impact than alternative A. | | | | | | | | | | | | | | | | | |
| Less = Less impact than alternative A. | | | | | | | | | | | | | | | | | |
| (a) This alternative contains provisions to mitigate this impact. | | | | | | | | | | | | | | | | | |
| (mp) This alternative contains provisions to partially mitigate this impact. | | | | | | | | | | | | | | | | | |

KEY TO COMPARISON SYMBOLS:

Same = Same input than alternative A.

Greater = Greater impact than alternative A.

Less = Less impact than alternative A.

(m) This alternative contains provisions to mitigate this impact.

(mp) This alternative contains provisions to partially mitigate this impact.

Numerical Rating: The relative levels of protection or benefits provided by each alternative for the rated elements of the environment. The higher the number the better.

HIGH MODERATE LOW NO PROTECTION OR BENEFITS

10 9 8 7 6 5 4 3 2 1

- Lower surface water quality due to untreated stormwater runoff.
- Increased traffic on roads within cities and the County.
- An increase in land use conflicts between the County and other communities in east Grays Harbor County. This has the potential to increase development costs, decrease the certainty for development proposals, and decrease the level of natural resource protection in east Grays Harbor County.

ALTERNATIVE C: PROPOSED RECOMMENDATIONS WITH GD-II POLICY AND GD-10 ZONE

C.1 Description

This alternative proposes that the entire package of proposals be adopted together with a GD-II Policy. The GD-II Policy is designed to provide increased protection to agricultural areas and forestry by applying a ten (10) acre minimum lot size zone to those lands adjacent to the Adopted Agricultural 2 District where topography or other physical barriers do not separate the agricultural areas from other uses. The ten (10) acre zone would also be applied to highly productive forest lands.

C.2 Major Adverse Environmental Effects

The effects of this alternative are very similar to Rural Lands Recommendations, with the exception that this proposal would somewhat reduce the conversion of highly productive commercial forest lands.

ALTERNATIVE D: LESS RESTRICTIVE POLICIES AND ZONES

D.1: Description

An alternative with less restrictive policies would provide more areas zoned for one acre development, provide for a greater mix of uses, and promote expanded urban service areas. This alternative would also have policies with lesser drainage provisions and providing a lower level of protection to unique habitats and areas of historical and archeological significance.

D.2: Major Adverse Environmental Effects

In addition to the adverse environmental impacts of the proposed Rural Lands Recommendations, this alternative would have major environmental impacts as a result of the changes described above. The major impacts include:

- Increased sheet erosion resulting from small acreage and suburban development on unstable soils.
- Increased flood damage due to increased levels of development permitted in flood plain areas.
- Small acreage development in areas without adequate potable water resources.
- Increased surface water and, in certain areas, ground water pollution from on-site sewage systems in unsuitable areas.

- Increased traffic loads on substandard County roads causing increased traffic hazards.
- Increased land use conflicts.
- The settlement patterns within the County would be more spread out making public services more difficult and expensive to provide.

ALTERNATIVE E: MORE RESTRICTIVE POLICIES AND ZONES

E.1 Description

An alternative with more restrictive policies would apply stricter criteria to determine areas suitable for small acreage development. The alternative would include policies designed to prevent the conversion of productive forest lands to uses with less economic productivity, provide greater limitations on stormwater runoff, encourage greater protection for important habitats, and provide for greater protection of historic and archeological resources.

E.2 Major Adverse Environmental Effects

This alternative would have almost no major adverse environmental effects on natural systems. Its principal effect would be to reduce housing location choice. For example, requiring that small acreage development occur on lands with a soil conservation service on site septic system suitability rating of "suitable" or "marginal" would reduce the areas available for small acreage development by perhaps sixty to eighty percent. This would probably not reduce population growth, however. The available data indicates that the east Grays Harbor County cities and towns together with their urban service areas could accommodate all projected east county population increases. It is probably not feasible to adopt this alternative.

ALTERNATIVE F: NO ACTION; EXISTING PLANS AND ZONES RETAINED

F.1 Description

This alternative proposes the retention of the existing plan for east Grays Harbor County and the existing County zoning districts. The areas zoned "Old Agriculture" would remain in that zone and be rezoned on a case-by-case basis. No one acre minimum lot size zone would be adopted.

F.2 Major Adverse Environmental Effects

One of the reasons the Rural Lands Study was initiated was the recent land use trends in eastern Grays Harbor County. Many of these trends resulted from changes in land use demands, a lack of policy guidance provided by the existing plan, a lack of policy and ordinance protection for the natural resources of the rural lands, a lack of zoning districts suitable for small acreage rural development, and the mixing of high intensity uses.

Under this alternative these land use trends would be expected to continue. The more significant trends include:

- (1) Increased rezones from the county's 1969 Agricultural zone and the General Development zone to General Residential. These rezones would be concentrated in the areas north of McCleary, and east and west of Elma.

- (2) Increased conversion of productive forest lands to uses of lower long term economic benefit.
- (3) Increased development in areas where access is provided by substandard public and private roads.
- (4) Increased drainage problems within new developments and increased stormwater runoff and flooding on downstream property.
- (5) An increase in intense land uses in rural areas.

These land use trends together with the deficiencies of the existing plans and ordinances would result in the following major adverse environmental impacts:

- Increased sheet erosion resulting from development on unstable soils.
- Increased danger to life and property due to development on unstable soils.
- Increased runoff and decreased absorption in more intensely developed areas.
- Small acreage and ex-urban development in areas without adequate potable water resources.
- Increased surface water, and in certain areas, ground water pollution from on site sewage systems in unsuitable areas.
- Degradation of salmon habitat from poor development practices and untreated stormwater runoff.
- Localized increase in light, noise, and glare from commercial and industrial development in suburban and rural areas.
- Increased land use conflicts.
- The increased conversion of productive forest lands to uses of lower, long term economic benefit.
- Increased traffic loads on substandard public and private roads causing increased traffic hazards.
- Increased demands on public facilities and services from scattered developments which will be difficult and expensive to serve.
- Increased energy used for transportation due to scattered development.

ALTERNATIVE G: NO PLAN, NO ZONES

G.1 Description

This alternative proposes the revocation of the County's existing comprehensive plans and zoning ordinances. This would not end land use regulations in the county, Grays Harbor County would be required to retain the Flood Plan

Management Zone, the Shorelines Master Program and the State Environmental Policy Act. Where these regulations do not apply, the preferences of individual property owners, the market, and in some cases short term economic benefit would control land uses.

G.2 Major Adverse Environmental Effects

This alternative would have the most severe adverse environmental economic effects of any alternative. It would have all the environmental impacts of the other alternatives, but with greater severity. The absence of criteria for land development could lead to a gradual deterioration of rural lifestyles, and would encourage development to occur without regard to the cost of providing public services.

The external costs of development are often brought to bear on the public, and in many cases, the capability of natural and cultural systems to absorb development is disregarded or ignored. In short, the market system often disregards resource and human values, environmental quality, and the enhancement of chosen lifestyles by allowing individuals to maximize their own benefits without regard for community benefit or the common public good. The absence of zoning may lower the initial short term costs of development; however, the social and financial costs incurred by sprawl development will affect the community at large over a long period of time. This alternative would have significant adverse impacts on the county's resource based economy. Forest products, fishing, agriculture, and tourism would all suffer.

Given Grays Harbor County's long tradition of comprehensive planning and zoning together with the substantial economic, social, and environmental benefits provided by these activities; the no plan, no zones alternative is not a realistic alternative to the Rural Lands Recommendations.

ALTERNATIVE H: PERFORMANCE ZONING

H.1 Description

Performance zoning is a method of regulating land uses by directly regulating their impacts. Where traditional zoning assures compatibility between uses and lessens potential problems by classifying uses into various districts based on their intensity and impacts, performance zoning directly regulates the anticipated impacts of development.

Performance zoning would replace the traditional use specifications and requirements with a set of empirically based numerical standards. Uses would generally be permitted as of right, provided they complied with the performance standards. Prior to approval, each development would be reviewed by the county planning staff. The developer would submit a detailed site plan. The staff would review the site plan and compare the anticipated impacts of the use(s) as designed with the numerical standards in the ordinance. The standards would cover everything from average daily traffic volume, to air pollution, to the number of bedrooms per dwelling unit. For each of these standards, the anticipated impact of the development would be calculated. If the proposal complied with the performance standards, it would be approved. If it did not, it would be denied. Very little discretion is given to the county after the performance standards are adopted.

The key to the performance zoning alternative is the performance standards. For the alternative to work, the performance standards must be based on the physical, social, and service capacity of the area. This requires a substantial amount of original research into an area's physical characteristics and public service capacities. There are two approaches to this research. The first approach, one that is used by several federal regulatory programs, is to have the applicant pay for the research required to develop the performance standards. This would be very expensive and would require the first developers in an area to pay a disproportionate share of the administrative costs.

The second approach is to have the County do the research in advance and develop the standards prior to the first application. This has the advantage of spreading the costs out among most of the beneficiaries. This would reduce the costs for developers, although because of the detailed nature of the review of each development, the developer would need to provide more information than is currently required. This will tend to increase a developer's front end costs.

Because of the amount of original research required into the area, its characteristics and the available capacity of the public services, costs would also be high for the County. This research together with the development of the performance standards would require a four to ten year commitment of time and tens, perhaps hundreds of thousands of dollars.

H.2 Major Adverse Environment Effects

Arguably a performance zoning alternative could be developed which would have few environmental impacts. The principal environmental impacts would include the use of non-renewable materials in construction, the commitments of land to long term uses, increased potential for conversion of agricultural and forestry lands, increases in the County's administrative costs, and increases in the cost of obtaining development permission. The amount of increased costs developers would have to bear would depend on the approach the County would take in developing performance standards. If the developers are required to do the research to develop the standards, the costs would almost be prohibitive. If the County did the research to develop the standards, costs the developer would bear would still increase. The developer would have to provide more information to enable staff to evaluate the proposal and review costs would have to increase to cover the increased staff time review of the proposals would require. Because the performance zoning concept is relatively new, it is uncertain whether the system and its costs would be acceptable to the residents of Grays Harbor County.

10. UNAVOIDABLE ADVERSE IMPACTS AND ENVIRONMENTAL BENEFITS OF THE PROPOSAL.

The proposal accepts a moderate level of growth and increased densities in some areas (while increased, the density levels provided by this proposal are still of a rural character). Therefore, certain specific impacts will occur and can only be seen as a trade-off for enhancing other environmental or human values. However, most of these impacts are indirect ones, related to directing growth away from the farming, forest, and other natural resource or hazard areas.

A. Unavoidable Adverse Impacts

The following is a list of those impacts which are adverse but cannot or will not be mitigated or avoided:

1. Increases in sheet and rill erosion and soil disruption.
2. Increased stream siltation, partially mitigated.
3. Increases in runoff, partially mitigated.
4. A risk of localized groundwater contamination.
5. Continued conversion of forest lands to other uses, principally residential uses, at a level lower than the present.
6. Increased noise and glare in localized areas.
7. Some increase in the risk of injury and property damage from the transportation of hazardous materials by rail due to increased residential densities along railroad lines.
8. An increase in the number of automobile trips.
9. A decrease in the aesthetic quality of the rural lands due to the development of open and undeveloped areas.
10. An on-site decrease in the natural flora and fauna in areas designated for development.
11. The planned conversion of 2,200 acres of prime agricultural land and 300 acres of actively farmed land.

B. The Relationship Between the Unavoidable Adverse Impacts and The Expected Environmental Benefits

As the introduction to this section noted, most of the impacts listed above are a trade-off for the environmental and social benefits that are expected as a result of implementing the Rural Lands Recommendations. Most of the impacts listed above are construction impacts which result from the development accommodated by the proposal. The anticipated environmental and social impacts

expected to result from implementation of this proposal include:

1. Increased guidance for county decision makers.
2. Increased cooperation between the county and cities, towns, and special districts.
3. Increased housing choice resulting from increased opportunities for small acreage developments.
4. Maintenance of the character of the rural lands.
5. Increased protection for groundwater resources.
6. Reduced peak stormwater runoff compared to current trends.
7. Directing growth towards those areas most suitable for development and away from areas with natural hazards (such as floodplains) high resource values (such as forests and farmlands).
8. Reduced land use conflicts through provisions intended to site intense uses in areas suitable for such uses.
9. Promotion of a land use pattern which conserves resources and provides for relatively lower costs of providing public facilities and services.
10. Increased protection for unique and endangered species.
11. Increased protection for unique archeological and historical resources.
12. The conservation of wildlife habitats and open space through the comprehensive plan General Development designation.

Notes on the Draft EIS:

¹WAC 197-10-405.

²Stevens, Thompson & Runyan Inc. Water Quality Management Plan Basin 22. (Aberdeen: The Grays Harbor Regional Planning Commission, July 1974.) p. 9-21.

³Paul A. Eddy, Geology and Ground-Water Resources of the Lower Chehalis River Valley and Adjacent Areas, Grays Harbor County, Washington. (Olympia: State of Washington, 1966) p.10.

⁴IBID p. 15.

⁵Telephone conversation with Walt Bergstrom, Southwest Regional Office of the Department of Ecology.

⁶National Safety Council. Highway Safety Program Analysis for Grays Harbor County, Washington. (Olympia: Washington Traffic Safety Commission, 1980) p. 3-6.

⁷Please note that the areas shown on Map 15 are very general. Actual determination of Classification for any individual residence is based upon distance from a recognized fire station on roads adequate to carry firefighting equipment. See Public Protection Classification Manual, Washington, (Seattle, Washington Surveying and Rating Bureau, 1980.)

⁸Public Protection Classification Manual, Washington, (Seattle: Washington Surveying and Rating Bureau, 1980.) p. 1.

⁹WAC 180-30-010. Additional footage may be granted to high schools with fewer than 400 students.

¹⁰Personal communication with Mark Stouffer, Utility Coordinator for the Town of McCleary (McCleary Power and Light.)

¹¹OP. CIT.Stevens, Thompson & Runyan Inc. p. 9-28.

14. LIST OF THE ELEMENTS OF THE ENVIRONMENT

In accordance with the requirements of the State Environmental Policy Act as set forth in WAC 197-10-444, this Section contains a list of the elements of the environment. The numbers following each element refer to the page where the discussion of the element may be found.

A. ELEMENTS OF THE PHYSICAL ENVIRONMENT, p.17.

1. Earth, p.17.

- (a) Geology, p.17.
- (b) Soils, p.18.
- (c) Topography, p.19.
- (d) Unique features. N/A.
- (e) Erosion, p.21.
- (f) Accretion/avulsion, N/A.

2. Air, p.25.

- (a) Air quality, p.25.
- (b) Odor, p.25.
- (c) Climate, p.25.

3. Water, p.28.

- (a) Surface water movement, p.28.
- (b) Runoff/absorption, p.28.
- (c) Flooding, p.29.
- (d) Surface water quantity, N/A.
- (e) Surface water quality, p.30.
- (f) Ground water, p.30.
- (g) Ground water quantity, p.30.
- (h) Ground water quality, p.30.
- (i) Public water supplies, p.31.

4. Flora, p.34.

- (a) Numbers of diversity of species, 34.
- (b) Unique species, p.34.
- (c) Barriers and/or corridors, p.35.
- (d) Agricultural crops, p.35.

5. Fauna, p.35.

- (a) Numbers of diversity of species, p.35.
- (b) Unique species, p.36.
- (c) Barriers and/or corridors, p.36.
- (d) Fish or wildlife habitat, p.36.

6. Noise, p.36.

7. Light and glare, p.37.

8. Land uses, p.38.
 9. Use of natural resources
 - (a) Rate of use, p.42.
 - (b) Nonrenewable resources, p.42.
 10. Risk of explosion or hazardous emissions, p.43.
- B. ELEMENTS OF THE HUMAN ENVIRONMENT, p.43.
1. Population, p.43.
 2. Housing, p.44.
 3. Transportation, p.50.
 - (a) Vehicular transportation generated, p.60.
 - (b) Parking facilities, p.55.
 - (c) Transportation systems, p.59.
 - (d) Movement/circulation of people or goods, p.50.
 - (e) Waterborne, rail, and air traffic, p.59.
 - (f) Traffic hazards, p.59.
 4. Public services, p.61.
 - (a) Fire, p.61.
 - (b) Police, p.64.
 - (c) Schools, p.64.
 - (d) Parks or other recreational facilities, p.71.
 - (e) Maintenance, p.73.
 - (f) Other governmental services, p.73.
 5. Energy, p.75.
 - (a) Amount required, p.75.
 - (b) Source/availability, p.75.
 6. Utilities, p.77.
 - (a) Energy, p.77.
 - (b) Communications, p.77.
 - (c) Water, p.77.
 - (d) Sewer, p.77.
 - (e) Storm water, p.78.
 - (f) Solid waste, p.78.
 7. Human health (including mental health), p.79.

8. Aesthetics, p.82.
9. Recreation, p.83.
10. Archeological/historical, p.83.
11. Additional population characteristics.
 - (a) Distribution by age, sex and ethnic characteristics of the residents in the geographical area affected by the environmental impacts of the proposal, p.83.
12. The County Economy, p.86.

APPENDIXES

APPENDIX A

RURAL LANDS RECOMMENDATIONS
ACREAGE IN EACH ZONING DISTRICT
EASTERN GRAYS HARBOR COUNTY

| <u>DISTRICT</u> | <u>SYMBOL</u> | <u>ACREAGE</u> | <u>MINIMUM LOT SIZE</u> |
|------------------------|---------------|----------------|-------------------------|
| General Development 5* | GD-5 | 387,062 | 5 acres |
| General Development 1* | GD-1 | 594 | 1 acre |
| Rural Residential* | RR | 5,740 | 1 acre |
| General Residential | R-2 | 1,468 | 10,000 sq. ft. |
| Tourist Commercial | C-1 | 11 | - |
| General Commercial | C-2 | 66 | - |
| Industrial Park | I-1 | 98 | - |
| Industrial | I-2 | 209 | - |
| Manufacturing | M | <u>396</u> | - |
| TOTAL | | 395,644 | |

Notes

*Proposed zoning district.

The recommendations propose deleting the Agricultural (the 1969 Agricultural) zoning district and modifying the existing General Development zoning district.

The other zoning district texts will not be changed.

APPENDIX B
EXISTING ZONING
ACREAGE IN EACH ZONING DISTRICT
EASTERN GRAYS HARBOR COUNTY

| <u>DISTRICT</u> | <u>SYMBOL</u> | <u>ACREAGE</u> | <u>MINIMUM LOT SIZE</u> |
|--|---------------|----------------|-------------------------|
| Agricultural (1969 Agricultural District) | A | 31,006 | 10 Acres |
| General Development | G | 358,359 | 5 Acres |
| Restricted Residential | R-1 | 18 | 15,000 sq. ft. |
| General Residential | R-2 | 5,623 | 10,000 sq. ft. |
| Resort Residential | R-3 | 22 | 7,200 sq. ft. |
| Tourist Commercial | C-1 | 31 | - |
| General Commercial | C-2 | 66 | - |
| Industrial Park | I-1 | 98 | - |
| Industrial | I-2 | 128 | - |
| Manufacturing | M | 293 | - |
| TOTAL | | 395,644 | |

NOAA COASTAL SERVICES CENTER LIBRARY



3 6668 14107 5244